

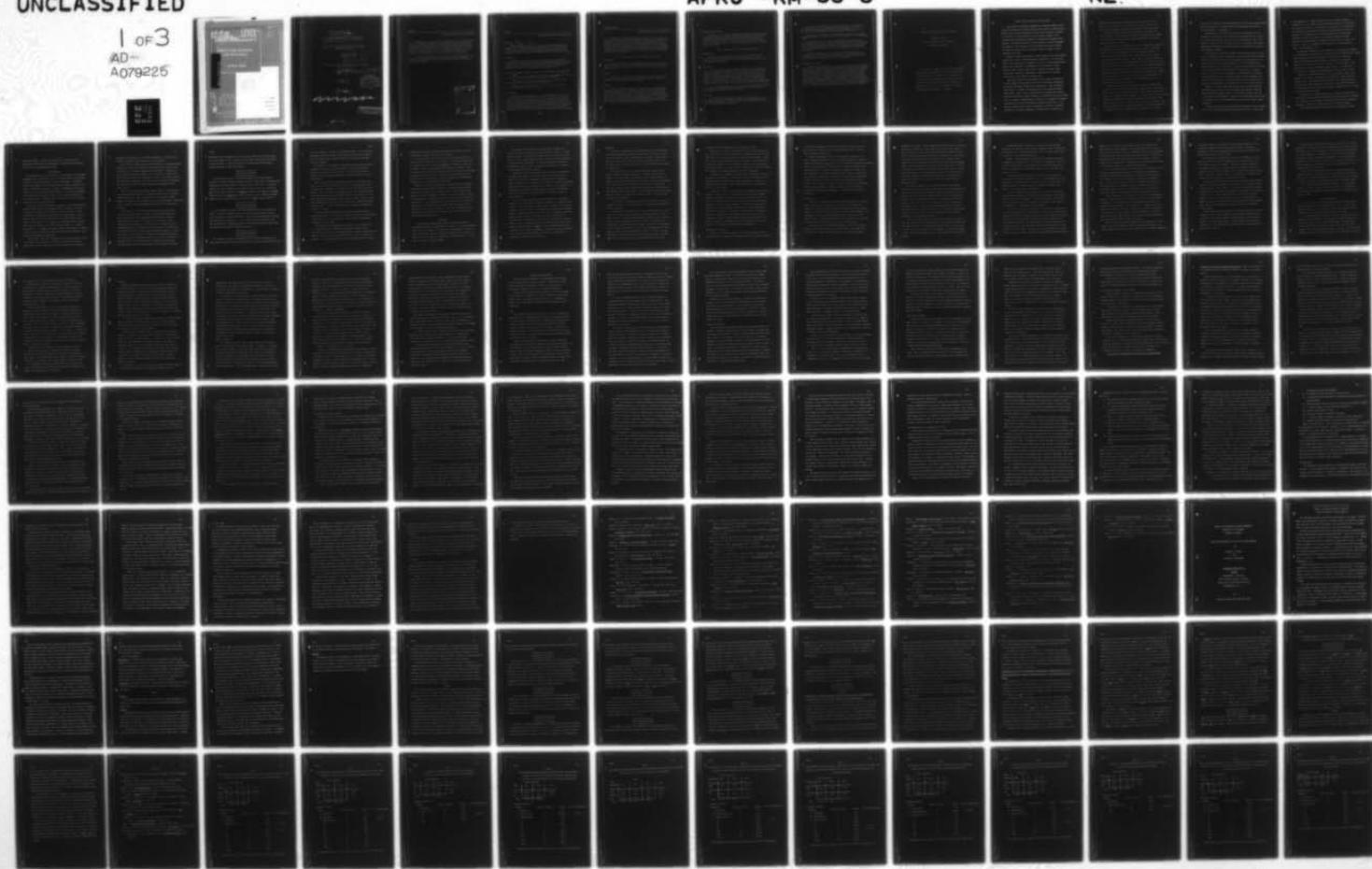
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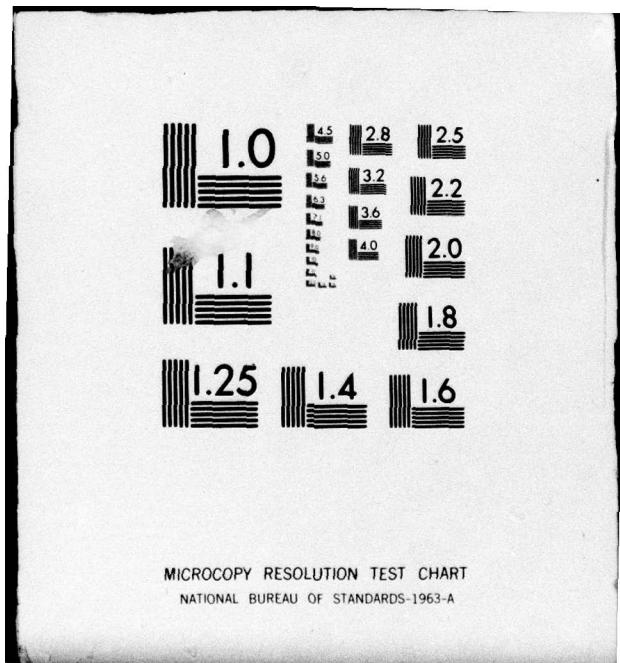
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(9) RESEARCH MEMORANDUM 63-6

(6) ESPRIT, GROUP DYNAMICS, AND MOTIVATION

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and Charles E. Hawkins

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PREFACE

ESPRIT, GROUP DYNAMICS, AND MOTIVATION

The Department of the Army, in July 1960, entered into a two-year contract with the University of Delaware Center for Research on Social Behavior for basic human factors research in the general area of esprit, group structure, and motivation. After consultation with representatives of the U. S. Army Personnel Research Office, Dr. Hubert E. Brogden and Dr. Arthur J. Drucker, the research objective was defined as "a study of the motivating effects of esprit on new group members and the way in which such effects vary as a function of the characteristics of the group and of its new members."

The final report submitted by the contractor constitutes USAPRO Research Memorandum 63-6, of which only the master file and a reference copy are retained. The research studies accomplished are summarized in the Brief and the Authors' Foreword.

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BRIEF

ESPRIT, GROUP DYNAMICS, AND MOTIVATION

PROBLEM

This Report

To investigate the effects of an existing group on the motivation and productivity of new group members, and specifically to determine how such effects vary as a function of characteristics both of the group and of the new members; emphasis is on social-psychological problems generated by the introduction of the newcomer into an organization such as a squad or platoon.

APPROACHES

Literature review to develop theoretical framework for study of the phenomenon of changing group membership, the process of newcomer assimilation, and the process of individuation or depersonalization of group members as a function of leader behavior; laboratory studies involving University of Delaware ROTC students and field studies among nearby Army units.

SELECTED CONCLUSIONS IN GROUP STRUCTURE AND INDIVIDUAL MOTIVATION RESEARCH

1. Groups led to anticipate frequent changes in membership adhere more closely to a formal group structure than do more stable groups.
2. Where the leader tends to differentiate among his men, the unit shows higher morale and greater team effectiveness.
3. Group members who perceive they are recognized as individuals accede more readily to group pressures.

IMPLICATIONS

Although the program represents a basic research effort, these studies of depersonalization have implications for a wide variety of situations in which the newcomer's identity is threatened by depersonalization practices inherent typically in large organizations where a limited number of highly defined roles and positions exist. The identification and definition of the problem of depersonalization in the process of assimilation of the new member, the demonstration of the behavior of newcomers under these conditions, and an exploration of positive means of countering any negative consequence of depersonalization are reasonable expectations of the two-year research program.

AUTHORS' FOREWORD

ESPRIT, GROUP DYNAMICS, AND MOTIVATION

The problem to which this contract was directed was "to determine the motivating effects of a group on new group members and the way in which such effects vary as a function of characteristics of the group and of the new members." Following on the scene explorations at Fort Dix and Fort Devens, the major problem was subdivided into two research areas: Part 1, problems concerning the assimilation process of the newcomer in the group; and Part 2, problems concerning depersonalization in large organizations. In each part, a theoretical analysis of the problem was followed by a series of laboratory experiments or field studies.

Part 1--The Assimilation of the Newcomer in the Army

REQUIREMENT

This part of the research program was designed to magnify the newcomer aspect of the basic problem in hopes of providing a more sound basis for further explorations concerning the assimilation process of the new member in an Army team.

PROCEDURE

A theoretical analysis of the phenomenon of changing group membership was conducted and was followed by two laboratory experiments involving membership changes in small laboratory groups.

FINDINGS

A number of unexpected advantages and disadvantages of changing group membership evolved from the theoretical analysis of the newcomer problem (Technical Report No. 1). In addition, results of the first laboratory experiment (Technical Report No. 2) suggested that the newcomer's talents are utilized to greater advantage under conditions of intergroup competition. The results of the second experiment (Technical Report No. 3) indicated that groups that anticipate changes in group membership accept a formal group structure and a new leader more readily, although a low power newcomer tends to be accepted less readily under these same conditions.

UTILIZATION OF FINDINGS

The findings of these initial explorations, along with future investigations evolving from this research program, should provide a more sound basis for writing educational materials for leaders concerning the process of integrating new members into various Army teams. The work also provides material for group discussion in leadership training classes. In general, these studies serve to heighten awareness of the many concomitants of group membership changes.

Part 2--Depersonalization in Large Organizations

REQUIREMENT

Part 2 of the research program concerned the newcomer's feeling of loss of identity or integrity following his introduction into a large organization, and the consequences of this diffuse self perception in terms of morale and productivity.

PROCEDURE

A theoretical analysis of the conflict between individual and group needs in the process of assimilation was followed by a field study and two laboratory experiments. The field study was conducted at Fort Benning, Georgia and involved 32 infantry squads and 11 artillery sections. The leader's ability to differentiate the members of his squad was measured in four ways including his memory of information about the individual team members. This ability of the leader to individualize the members of his squad was analyzed in relation to team morale (as measured by a questionnaire administered to the individual team members) and ratings of team productivity.

In the laboratory experiments, several methods of individualizing members of groups were associated with member's responses concerning feelings of importance to the group and group conformity.

FINDINGS

The theoretical paper (Technical Report No. 4) discusses the development of self identity and the threat to the self concept inherent in large organizations. In addition, methods to minimize depersonalization in large organizations were suggested.

The results of the field study (Technical Report No. 5) indicated that the leader's tendencies to differentiate among the members of his unit are associated with higher team morale and military effectiveness. In some sense this finding corroborates the old Army dictum, "know your men."

In this same field study, it was also found that teams with high morale performed less well on a prescribed task which was perceived as an inappropriate demand.

Technical Report No. 6 describes the fortuitous finding that higher rated leaders tend to possess a more positive attitude toward the trainability of all personnel assigned to their units. Furthermore, it was found that the more successful leader did not categorize the less talented team members or those less positively disposed toward military training as untrainables and incorrigibles.

Technical Report No. 7 and 8 indicated that individuation can be manipulated in a laboratory setting. Furthermore, the results suggest that members who perceive that they are recognized as individuals tend to conform to group pressures with greater facility and satisfaction.

UTILIZATION OF FINDINGS

Assuming that depersonalization is an important consideration in adjustment to military life with its emphasis on uniformity and group identity, military leaders may be helped to become more aware of the concept and its implications for leadership, morale, enlistment and reenlistment. Furthermore, while the gnome "know your men" has wide acceptance in military education, the phrase assumes new meaning and significance in the present context. The problem of individuation should be pursued both experimentally and through discussions among Army officials to determine the characteristics of members who adapt more readily to depersonalizing environmental conditions and to determine means of minimizing the effects of depersonalization. It should be cautioned, however, that the leader's tendency to look upon the members of a group as individuals may be a personality characteristic which may not be amenable to training.

Toward a Theory of Open and Closed Groups

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Toward a Theory of Open and Closed Groups

It has long been recognized by organization theorists (Hemphill, 1951) that group stability is an eminent construct with relation to group behavior. However, only a cursory investigation of small group literature is suffice to reveal that the experimentation has been concerned largely if not exclusively with processes and products of groups whose membership remains constant. This traditional model of social research is scarcely isomorphic with regard to social systems as we would know them if we did not ignore or repress the minatory forces of illness, death, and changes in group composition in general.

Certainly a basic characteristic of social systems is that they maintain themselves in a state of perpetual change of components. It is true that within a given time span the composition of the social system appears static. However, this perception is nonveridical; we are deceived by our own parallel movement along the flow of time. Moreover, perpetual change involving the components of the system are obscured by the relatively "steady state" of the system at the molar level.

Implicitly, changes in group composition have negative associations. In truth, change in the generic sense tends to be perceived unfavorably, although the individual differences are hypothesized. Thus, according to Heider (1958, p. 173-194), the xenophils tends to be favorably disposed toward change. Still it will be postulated that in approaching a dynamic environment involving an array of familiar and unfamiliar objects, the tension level of a cognitive organism tends to increase as a consequence of negative reinforcement in previously encountered unstructured situations. An unfamiliar situation poses a threat to individual security; the adjustment processes are accelerated demanding a redistribution of activity and an

additional energy expenditure. Moreover, it is often assumed (March & Simon, 1958, p. 94) that "in general and up to a fairly extreme point, increased predictability yields increased satisfaction for most people."

Von Wiese and Becker (1932) and Becker (1950, p. 50) support this latter viewpoint. Their propositions describe the hostility which attends the advent of a newcomer to relatively stable groups, since the newcomer represents the force of change.

On the other hand, at the common sense level of psychology, a number of assumptions have been made concerning the positive aspects of membership change. It is said, for example, that newly commissioned officers in military units in the 1930 decade were reassigned frequently in order to avoid reminders of initial failures. Highly capable coaches and members of professional baseball teams with disappointing records are replaced, and the need for "new blood" or a new environment is offered in mythical explanation. Speculation is widespread as to the number of years that a given group can profitably or safely retain the same leader (McVey & Hughes, 1952). Finally, changes in personnel are the bane of embezzlers. In general, these and other speculative change strategies in group membership derive from an implicit theory of open-closed groups.

Perhaps the first systematic analyses concerning open-closed group phenomenon as found in the writings of Simmel (Wolff, 1950). Specifically, Simmel speculated extensively concerning the unique characteristic of the stranger in an otherwise stable community. The nucleus of the characteristics discussed is composed of the concepts of mobility and objectivity. "The fundamentally mobile person comes in contact, at one time or another, with every individual, but is not organically connected, through established ties of kinship, locality, and occupation, with any single one" (p. 404).

Moreover, the stranger "is not radically committed to the unique ingredients and peculiar tendencies of the group, and therefore approaches them with the specific attitude of 'objectivity'."

Though Simmel was concerned largely with the characteristics of the stranger, the arguments also have implications for groups which do or do not have contact with strangers; that is, open and closed groups. Thus, if the members of a group are or are not mobile, it may be anticipated that certain interpersonal relationship and group processes in general will be associated with this group condition.

The implications of Simmel's framework for group behavior may be illustrated in conjunction with the findings of Torrance's study (1955) concerning the problem-solving effectiveness of newly composed military groups in comparison with well established military groups. It was found that newly composed groups were more effective in a problem-solving situation and tended to ignore status differentials (military rank differences) to a greater degree. These results may be interpreted as an extrapolation of Simmel's objectivity hypothesis with references to groups in which strangers wander in and out (open groups in our present context); that is, strangers tend to ignore status differentials if the group's life is to be of short duration.

However, the aforementioned observations tends to concern implicitly only what is here referred to as closed groups or perhaps more accurately quasi closed groups (Allport, 1961). The open-closed concept enters only tangentially or by extrapolation. Thus, the open-closed group concept imposes a new dimension on the newcomer phenomenon and renders the earlier analyses incomplete.

The open-closed group concept derives rather broadly and only analogously from a general systems theory framework (Bertalanffy, 1950). A basic unit

of this approach is a "system" defined as a "set of elements standing in interaction." (p. 23) Systems in this very general sense may be categorized as either open or closed. A closed system is considered to be isolated from the environment, new elements are excluded and the departure of elements is precluded. It is proposed that most living organisms are initially open systems since they are maintained "in a continuous inflow and outflow, building up and breaking down of components, neither being, as long as it is alive, in a state of...equilibrium but maintained in a so-called steady state..." (Bertalanffy, p. 23).

Extending this framework to social systems, an open group may be defined as an interacting set of persons in a continuous state of membership flux. Under these conditions of social metabolism, the elements of the complex are temporarily interrelated owing to periodic or frequent but unscheduled replacements, removals, or additions of elements. In closed groups, on the other hand, the elemental composition remains constant. Of course these are extremes on a continuum if membership change is less or more frequent.

Indeed, the distinction between open and closed groups resides in the members' and nonmembers' perceptions of the stability of group composition. In these terms, a third category may be formulated, the temporary group, or the group whose total membership is convoked for a relatively brief period of time (usually for a specific limited purpose and disbanded when the outcome of the group activity is known).

Consideration of a third category, however, would only complicate the theoretical development without contributing proportionately to the framework. For, in essence, as noted earlier in Torrance's study (1955) the temporary group may be treated as a special case of the open group condition.

Four fundamental characteristics appear to distinguish open groups

from closed groups: a reduced time perspective; the achievement and maintenance of steady states (equilibrium); an expanded frame of reference; and, of course, changing group membership.

Time Perspective

By definition the lives of the member of closed groups are inextricably intermingled for a given period of time. Conversely, members of open groups are aware of the transitory nature of these relationships. Necessarily, then, the time perspective of open group members is markedly contracted. The future is indistinct; the present is dominant. Implementation of group decisions tend to be activated with greater haste. If the present membership is to benefit from a given group action, the action must be undertaken in the immediate future. Postponement may be tantamount to inaction for those members who may be removed or replaced.

These rather simple observations concerning open and closed groups have extensive implications for relationships among the members of this group. It is proposed that members of open groups in contrast to members of closed groups perceive idiosyncratic inter-dependence as dysfunctional. This proposition assumes that the members perceive that constant adjustment to the peculiar characteristics of the changing group membership tends to dissipate the energy of the group in its endless effort to achieve even a modicum of group structure. Or perhaps, more simply, members of open groups are compelled to seek a more reliable basis for group structure other than elaborate interpersonal attachments and dependencies.

Sorokin (1927) states that contemporary Western society demands a reduced sensitivity to the environment. He contends (p. 518) that our nervous system would be wrecked completely if it were sensitive to the innumerable

phenomena which surround us in our permanent mobility. At least two alternatives are possible; group orientation or self orientation.

Group structure growing from the members attachment to the group *qua* group rather than to unique relationship with individual members insures a degree of stability in an otherwise changing social environment. Accordingly, it may be anticipated that open groups are less concerned, for example, with who is largely responsible for group success and the status achieved thereby. This status may be short-lived. The mere fact that the task is accomplished is a sufficient condition for member satisfaction (Cartwright & Zander, 1953, p. 310).

Still a second alternative strongly suggests itself: self orientation. Self orientation may also provide a relatively stable bases in an otherwise changing social field. Thus, in anticipation of being forced to change groups, the members may become primarily concerned with transferable acquisitions, that is, returns or benefits advantageous primarily for the single mobile individual.

Sorokin (1927, p. 541) states this proposition more generally and contends that mobility favors an increase of individualism followed by a vague cosmopolitanism. His argument proceeds as follows. Horizontal mobility weakens attachment to a definite place or country. When an individual passes from position to position and often belongs to several overlapping groups, his attachment to the box becomes less intensive, his characteristics cannot be decided through his temporary position, in order to know him one must take him as an individual and study his personality. This participation in many groups, shifting from one group to another, and impossibility of identification with any one group makes an individual something separate from a social box; awakens his personality, transforms

significant in any meaningful way it was noted that members of open groups tended to be more satisfied than the members of closed groups, particularly with reference to the second task. It was also noted that the medium power member generally deviated less than the high and low members.

Insert Table 4 about here

The results with regard to the member's influence on the group decision (deviation of initial individual estimate from group decision) were not statistically significant either with reference to tasks one, two, or task three. It was noted, however, that power and influence were directly related on task one. On task two Low still was least influential; but Medium was somewhat more influential than High. Finally in task three, Medium emerged more clearly as the most influential members.

There was little difference between the influence of High and Low (see Table 5).

Insert Table 5 about here

A more detailed description of the data regarding task three is presented in Table 6. Again the statistical design is the same as that presented in Table 1. It was noted that the interaction between the open-closed and replacement conditions were statistically significant ($p < .10$). Moreover the mean deviation of the group members initial individual estimates from the group decision was lowest under the closed-replace-low-member condition (see Table 6).

Insert Table 6 about here

The analyses of variance and descriptive data concerning the member's post-group estimate deviation from the group decision on task three is presented in Table 7

him from a component of a group to an individual person. As he is shifting from group to group, he now must secure rights and privileges for himself, not for a specific group, because he himself does not know in what group he will be tomorrow.

To counteract the possibility of this short-term perspective, the group may invoke the concept of a universal group or a universal philosophy or religion to which all men belong or adhere. In this way, inter-group mobility becomes intra-group mobility and a degree of stability is achieved by the system.

Again, Sorokin (1927, p. 516) speculates that if an individual knows that he has to stay in a given place for life, he is vitally interested in the study of his environment. The tourist does not have such an incentive. Members of mobile societies do not stay long in one "social box"; why should they burden themselves with such additional effort as is required to study their environment seriously since they are going to shift? They try to know their temporary box only as much as is necessary for a passable performance of their function. We more and more acquire the superficial psychology and attitude of a tourist.

Accordingly Sorokin hypothesizes that mobility diminishes intimacy. A Russian proverb says: "to know a man intimately, one must eat several bushels of salt with him." It is unlikely that a nobly intimate relationship is established in a short time.

These arguments also suggest that the stability of the social system is a consideration in the concept of "reciprocity" (Gouldner, 1954). Reciprocity is defined as the "mutually contingent exchange of gratification." Moreover, Gouldner (1960, p. 171) postulates that a norm of reciprocity is universal. In its universal form the norm of reciprocity is said to demand

minimally that (a) people should help those who have helped them, and (b) people should not injure those who have helped them.

This norm, however, like most norms is most effectively inforced in a stable or closed social system. For example, if a benefit is bestowed upon the newcomer by a longer term member (sedente), the possibility exists that the latter may depart from the group before repayment is possible. Thus, the exchange may be delayed or altogether flounder and the social relationship may remain in the nascent state. Likewise, any beneficent member of the group may fail to be recompensed. In open groups then, the mechanisms for reciprocity are of central concern for the group.

Reverting to our earlier analyses; it is proposed that in open groups interpersonal interdependency surrenders to person-group interdependency. Members bestow favors on other members in the name of the group, and the group or the larger organization of which it is a part is obliged to assume the responsibility of reciprocation. Herein lies the concept of loyalty and its rewards. In closed groups, then, the reciprocity norm functions among individuals; in open groups, the reciprocity norm functions between the individual and the group as a group. Yet, the norm of reciprocity must be established and the group will remain stable only to the extent that the norm is maintained in practice.

Equilibrium

The theoretical framework which associate open-closed groups and equilibrium was sketched by Chappel and Coon (1942). "A state of equilibrium may be defined as follows: if a small force is impressed upon a system, a change or adjustment takes place within the system, and once that force is removed, the system returns to approximately its previous state." One such force is a change in group membership.

For example, when one member of the group leaves, changes in the relations between all members must take place before a new state of equilibrium is achieved. This process of adjustment within a group as an aftermath of a change in group composition may be marked by cyclical fluctuations in group process and performance. As the group gradually reestablishes equilibrium, the range of these fluctuations may diminish and the rhythm of the group processes may be measured.

Chappel and Coon (1942) hypothesize that the greater the stability of the group (closed groups in the present context), the stronger and less elastic is the state of equilibrium. As has previously been suggested, however, disturbances in equilibrium may be minimized if they are anticipated. Group structure under open conditions may be adapted to the constraints of changing group membership or through training procedures the membership may become increased to required adjustments in response to changes in group composition.

It has been repeatedly suggested that instability is a basic shortcoming of an open group system. Changing leadership at an inopportune time, a rapid turnover of personnel, a sudden exodus of members, a loss of group identity, a concern for sources of replacements or additions, the unpredictability of future social contacts are just a few of the problems inherently involved in open groups. It is assumed here that a constant state of disequilibrium is nonfunctional to the group and intolerable to the group members. Thus, it is hypothesized that the members of open groups develop procedures which minimize the mephitic effects of membership changes and establish a state of dynamic equilibrium. This state of dynamic equilibrium may be achieved through consideration of group size, homogeneity of personnel, and turnover rate or turbulence.

Group Size

It is almost a truism that large organizations will be less disturbed than small organizations by changes in a given number of members. Just as one candle placed in a group of one-hundred will produce a less noticeable difference than one candle added to a group of ten (Weber, 1834), so one can expect similar effects with regard to the addition or removal of members to a human group.

It is proposed that a certain minimum group size exists which may insure a degree of membership stability. For example, if the group is composed of only two persons, the departure of one of these dissolves the group in effect. With the advent of a third person, however, the organization is no longer dependent on the retention of all members. Nevertheless, with three members, there is a substantial probability that two members may leave simultaneously, particularly in view of a possible corcatenation effect. Thus, it seems safe to suggest that a basic unit size in terms of minimum stability is four members.

An inverse line of reasoning indicates that the dyad is the condition in which the members are most interdependent. Either party can dissolve the unit by resignation.

By extrapolation from Weber's Law, it may be assumed that the exodus of one or more members is more noticeable in a small group than in a large group. Thus, in a period of down-mobility where personnel must be released, the effect will be immediately more evident and the repercussions more devastating in a small than in a large group. Since the entire organization is more threatened by the loss of a member from a small group than a large group, the members of small groups may over-react to the threat of group disintegration or degeneration and leave the group prematurely. Moreover, under these conditions, undue power is inherently accorded the mobile

individual since he possesses the power to destroy the group.

Group size is a critical consideration in terms of group stability from yet another point of view. The probability of compatibility between the new member with at least one other member is increased with an increase in group size. Thus, the assimilation process may be presumed to be facilitated by increasing the number in the host group--at least to a modest degree--and, it may follow, that the new member will be more likely to remain in the group and contribute to the group's stability under these conditions.

If, however, the membership is homogeneous to a high degree, the size of the group is less critical. It is assumed here that the increased size is generally related to increased membership heterogeneity or spectrum of personalities which tends to insure compatibility of the new member with at least one other member.

A large social unit can also accommodate the individual needs of the new member to a greater degree. A small social unit often requires special services to compliment those already exercised by existing members. If then the new members skills do not meet the specific needs of the smaller organization, there is reduced opportunity to adjust by locating another position for the newcomer within the same unit. A large organization, on the other hand, provides a wider range of positions and values which the newcomer may find suitable to his needs as well as to the needs of the organization. Thus, in a larger organization, individual adjustment can take place within the organization, selection procedures are not unduly taxed, and the stability of the organization is maintained.

Homogeneity of Personnel

Earlier it was stated that member heterogeneity resulting from increasing group size facilitates the assimilation process and group stability.

A heterogeneous grouping of personnel also facilitates group stability by providing a more extensive pool of replacements which insure an adequate flow of personnel into the unit.

Homogeneous groupings of personnel is frequently recommended on the bases of improved compatibility and on the implicit assumption of improved productivity (Haythorne, et al, 1956). Even if homogeneous grouping were possible, and there is great doubt of it because of the multivarious variables which demand consideration, homogeneity increases the problem of finding a suitable replacement for a member departing from such a group. Necessarily the pool of available replacements is limited, thus decreasing the probability of rapid replacement. Moreover, a unit which is homogeneously composed tends to create a public image which is easily ridiculed, thus contributing to the recruitment problem. Finally, membership homogeneity probably intensifies pressures toward uniformity, a possible threat to prospective new members.

Turnover Rate

The problem of turnover in relation to group productivity in a communication network has been discussed by Trow (1959). It was assumed that "turnover necessarily disrupts informal understandings and working arrangements"...and therefore affects the coordinates of the group's activities and discussions. Moreover, turnover usually entails a loss of part of the group's "memory". Finally, Trow points out that "turnover has the potential for changing the average ability level of the executive group."

Increasing the rate of turnover presumably may reach the height where personnel problems hold precedence over productivity. Open groups, then, are required to conduct membership changes at a rate which is minimally

disturbing to the group. One means suggested by Trow's results, is that when changes are necessary, it is most efficient over a long period of time to make the changes in a block, rather than protracting the transition period. However, under military combat conditions, the replacement of a large block of personnel may interfere with the confidence of the remainder of the organization as to interfere with its effectiveness under stress (Anonymous, 1946). In this regard, recently, the United States Army has set a ceiling on turnover rate in strategic units which are poised for combat in the event of an enemy attack. It is interesting to note that the Army used the more molar term, "turbulence" rather than turnover rate. The optimum rate of turnover thus appears to be a function of the task demands in which the group finds itself.

For example, Forgays and Levy (1957) working with bomber aircrews found that, in general, crews with a medium number of membership changes had better combat performance scores than the high-or-low change crews. They proposed that "the individual-interchangeability policy has many positive features, if one considers the economics of unit training and unit performance in combat. The notion that a commander may be free to change the membership of units under his command without performance and motivation decrements connotes a desirable flexibility. The concept of crew integrity, however, implies that unit is a unique organization and will suffer in performance if membership changes occur."

Another study which again is concerned more with amount of turnover or with turnover as opposed to stability was recently reported by Rogers, Ford, and Tassone (1960). In an information-processing situation, crew turnover tended to degrade the group's level of performance. The differences appear to have been largely attributable to the relative skill of the replacement, however.

A relationship between turbulence or turnover rate and membership satisfaction was reported by Darley, Grass, and Martin (1951). Satisfaction of girls with their own dormitory life was found to be related negatively to the stability of the dormitory population.

Finally, a relationship between growth rate and institutional strength is hypothesized by Chapin (1957). On the basis of a comparison of eight old and eight young churches, it was hypothesized that weak institutions are a result of disintegration from burgeoning group size or, on the other hand, a lack of new blood.

A characteristic which is shared by both open and closed systems is that changes in components immediately react on the characteristics of other components in the system leading to a serial reaction. However, since open systems anticipate membership changes, open systems are probably less subject to over-reaction than closed systems.

In order to counteract this tendency and to maintain efficient functioning during readjustment, open systems probably develop a certain amount of lag or decrease in sensitivity to change (Herbst, 1954; p. 333). By lag here is meant the amount of time required before changes in one component are communicated or transferred to other components.

One concrete means of building a lag into the system is to suggest that the host group members react to the position to which the new member has been assigned rather than to his characteristics as a unique individual. Military units, which are reasonably open in character provide a classic model of this adjustment procedure. The position which the military replacement is to occupy as well as the interrelationship with other unit personnel is clearly outlined in various manuals. Moreover, the position occupied by the newcomer as well as his role, in part, are indicated by appropriate symbols prominently

displayed in the uniform of the new member and the other members of the unit in which he had been assigned. Thus military personnel are heard to say "You salute the bar not the man." Adjustment to the man as an individual is delayed until the unit can adjust to the position change. Moreover, the relationship between each individual member and the newcomer is clearly outlined in the military table of organization thus eliminating any necessity for an extended exploratory or pecking-order procedures.

One of the inherent problems of open groups is the maintenance of a flow of personnel in and out of the system. For purposes of generalization, it will be assumed that group membership is voluntary and that group size is a constant, that is, that the group is not growing or diminishing in size. Another condition imposed is that it is desirable to maintain a relatively invariant age distribution among the members in order to meet the physical requirements of the various positions in the group and to avoid the necessity of mass replacements as the members advance in age.

A vital consideration in the maintenance of the flow of voluntary personnel is a positive image of the system on the part of potential members. Presumably one of the primary sources of information about the group is derived from former members. It is proposed that a favorable image of the system is a function of the degree to which the new members are assimilated by the system, the degree to which the member's transition is facilitated from the system to another system and, of course, the member's satisfaction with the group while still a member of the group.

Again methods of facilitating ingress will be discussed in detail in another section. With regard to methods of facilitating egression, to the author's knowledge this problem has not previously been recognized, emphasized,

or adequately stated in the present context, although considerable effort was directed toward reducing the peculiar difficulties of egression of prisoner's of war and neuro-psychiatric patients during and following World War II (Wilson, Trist, and Curle, 1952).

It is assumed here that during the last days of membership in an open group, problems associated with transition to another group tend to become the dominant concern of the egressor. Assistance in making a successful and satisfying transition to another group may be expected to reduce the tendency of former members to derogate the donor group (see Caplain and McGee, 1958). In this way a positive image of the organization is maintained and an adequate pool of prospective new members is preserved.

Another empirical development among existing open group systems such as colleges and universities, military service units, or even political groups are organizations of former members. These include alumni clubs, veterans organizations, political parties and perhaps the Actors Guild. The function of these latter more stable organizations are manifold but may include maintenance of the flow of personnel in and out of the organization to which they serve in an auxiliary capacity and perhaps as an extended reward system which the parent organization is unable to provide loyal and deserving members.

These graduate-type organizations also extends the power of the parent organizations into an area in which they may otherwise be prevented from operating. Thus, veteran's groups can actively engage in politics while members of the Armed Forces cannot. Or alumni organizations may provide scholarships or job opportunities to athletes where the football coach is prevented from doing so.

The organization extensions also protects the reputation of the parent organization. Criticisms of the parent organization are confined to members and former members of the organization. Moreover, the present organization can exercise sanctions on a transgressor who has left the organization by precluding membership in the graduate organization. With these graduate groups, then, a former member in effect can never escape the influence of the present organization. In this respect the open group assumes some of the characteristics of a closed group.

Groups in which career are short-lived or hazardous almost seem to demand the services of the extended group. If rewards were not extended beyond college football playing days, for example, few men would be willing to risk the time, effort, and physical energy for the short-term rewards.

One is struck here by the parallel in religion. A veterans group composed of "angels", "saints", and the loyal few has been established in most religions of the world to increase stability of the temporary or open human life system.

Frame of Reference

The term "frame of reference" commonly refers to the ground against which the figure is perceived (Newcomb, 1950, p. 94). We shall use the broader definition of the term which includes all the factors, objective and subjective, which influence the perception of the figure.

It is proposed that open groups in contrast to closed groups have an expanded frame of reference. If closed groups and immobile societies may be equated, Sorokin (1927, p. 519) writings support this proposition. He observes that members of an immobile society learn, as a rule, only a definite course of ideas, opinions, beliefs, and values. They have little opportunity to listen to many ideologies and to learn different beliefs and,

as a consequence, their belief systems are strong and inflexible.

March and Simon's (1958, p. 53) proposition concerning an evoked set of alternatives in a decision making situation is a general principle of which Sorokin's observation above is a specific incidence. In general, the greater the objective availability of external alternatives, the more likely that such alternatives will be evoked. Thus under open condition in contrast to closed conditions it is anticipated that a wider range of alternatives will be evoked.

Several advantages inhere in the use of the larger organization or population as a frame of reference for status evaluations rather than a fortuitously selected small closed group. In the expanded frame of reference of the larger organization in which transfers frequently occur, more accurate and more reliable ratings of the members are possible since all members of the total population tend to be exposed to paired comparisons with a wide variety of members. Similarly, more accurate self ratings are encouraged with such open systems. Since it is less possible to insulate and isolate oneself from the total population of the open group system, inflated self estimates do not remain unchecked or unchallenged for long, nor are erroneous self estimates buttressed for long by peculiar status achievements within a given small social unit.

Extending the previous arguments to groups as groups as well as to the members, the closed groups in contrast to open groups may defend erroneous group ratings by isolation from the progress or improvement in other groups. In open group systems, then, islands of cultural or organizational lag are less probable than in closed groups (see Redfield, 1953).

The proposition concerning an expanded frame of reference in open groups also has implications for group creativity, change in group set and changes in group structure as novel stimuli.

Creativity

Many social scientists have long held that creativity flourishes in societies where there is a continuous flow of new exogenous members (open societies), and curbed in societies from which strangers are restricted (closed societies). The usual rationale for this proposition is that isolation results in highly specialized conceptual frameworks and rigid limitations on the kind of behavior deemed acceptable in a given situation (Redfield, 1947). Sorokin (1927) however, proposed that in horizontally immobile societies with their "permanent and monotonous environment, there is little incentive for invention" and no favorable combination of conditions which may suggest the ideas of invention.

The only empirical evidence supporting this hypothesis involves research teams in industrial laboratories (Shepard, 1955). The results suggest that group productivity, creativity, and enthusiasm are negatively related to length of association of the group members.

Conversely, Park and Burgess (1921) have suggested that isolation is conducive to creativity. They propose that contact with a vast number of other ideas tends to encourage imitation. Recently, Rose and Felton (1955) tested his latter hypothesis in "laboratory cultures". The number of individual responses to selected Rorschach cards provided the measure of creativity. It was concluded that invention is curbed in open societies, and that culture borrowing increases immediately following experiences in new societies. The generality of these conclusions may be disputed, however, since the instrument purporting to measure creativity lacks empirical validation.

It is proposed here that under open group conditions constant adjustment to specified characteristics of the changing membership as well as to

changing roles and status hierarchies is perceived by the members as dysfunctional. The members of open groups are assumed to be aware or to have learned that energy is only dissipated in an endless effort to establish transitory interpersonal relationships.

A more durable and functional bases for group structure may be adopted under open conditions: group syntality or the measured performance of the group as a whole (Cattell, 1951). Thus, it is proffered that in open groups, in contrast to closed groups, individual status and interpersonal orientation are less salient (Sorokin, 1957, p. 522), and group status or group productivity orientation is substituted. Accordingly, members of open groups were presumed to be less concerned about which member is primarily responsible for successful group performance and the status accrued thereby. Group task accomplishment is a sufficient condition for membership satisfaction (Cartwright and Zander, 1953, p. 310). It was anticipated, then, that criticism arising from status striving is minimized in open groups; and by minimizing captious criticism a condition conducive to creativity is induced (Stein, 1953).

Change in Group Set

It is hypothesized that a change in group composition facilitates a change in the group set toward group outcomes. For example, it is proposed that a failure atmosphere or attitudes constituting low group evaluation following group failure are dissociated more readily if the membership is altered. Furthermore, it may be proposed that the disruption of group continuity provides a convenient bases for dividing the group history into two time segments -- the past and the future -- and for compartmentalizing failure with the past. Indeed, following failure, a change of any kind may

provide a plausible basis for dissociating the past and perceiving the future as a "new deal" or a new group era relatively free from obtrusive reminders of past unpleasantries (the New Year's eve phenomenon). Change per se is efficacious. Any one of a variety of changes may provide a rallying point or a convenient defense mechanism which serves a therapeutic function for groups embarrassed by memories of failure. Examples of the proposed group dynamism abound at the "common sense" level of psychology: the replacement or even the exchange of the coaches of football and baseball teams with disappointing records; and in general, the expressed need for "new blood" in a dyspeptic organization.

On the other hand, it may be proposed that groups with a history of success attempt to minimize change in order to preserve the identity of the group and the member's perceptions of the nebulous but accepted "winning combination". It is difficult for group members as well as for professional social scientists to define the bases for group success. Thus, in the event of group success, it is predicted that the group members tend to adhere in every detail to the previously successful pattern of group behavior. Since this is impossible under conditions of membership change, a change may be perceived as potentially corrupting or as a threat to the group's rather imponderable but, nevertheless, successful pattern of behavior.

Changes in Group Structure as Novel Stimuli

A change in group structure or particularly group membership necessarily presents a novel visual or novel social field. It has been posited that the initial reaction to a novel stimulus is one of orientation, exploratory behavior, and renewed activity (Glanzer, 1953; Montgomery, 1952). Indeed, studies concerning individual behavior under conditions of extreme isolation from the environment (stimulus deprivation) have tended to support the

hypothesis that "the maintenance of normal intelligent, adaptive behavior requires a continually varied sensory input" (Bertón, Heron, Scott, 1954). Thus, the introduction of a new stimulus object or change in the social field may tend to reactivate the augment group interaction. The responses of the members to the total situation may be restored, since readjustments in terms of communication patterns, roles, and position are demanded. Earlier role adaptations, for example, must be reexamined in the light of the changed group composition; and level of performance in the frame of reference of earlier group composition must be transformed according to the new scale of abilities. Thus, a reorientation period is initiated leading to demands for increased activity.

The results of experiments concerning social facilitation may also be interpreted within the aforementioned framework. Thus, in a free association task, Allport (1924) found an increase in scores from the individual to the "together" situation. Social facilitation was greatest during the first minute of a three-minute test and least during the last minute.

In a second study of social facilitation, Burton (1941) used a procedure whereby a child of nursery school age was satiated in a peg-board task, after which another child was introduced to help him finish the game. Subsequently the satiation effect on the original child was generally reduced.

In these studies concerning social facilitation, productivity was increased following a change in the social environment. It is noted, however, that productivity in each of these studies concerns either individual productivity or group productivity involving a minimum of member interdependence. It is now proposed that individual and group productivity are augmented by the novelty effect of a change in the social stimulus under these task demands.

Changing Group Membership

The most obvious characteristic that distinguishes closed groups is the inevitable change in group composition. Members may be added, removed, or replaced. Replacement, however, is a composite of a removal and an addition so it need not be discussed separately.

Changes in group composition may be strategic or merely in response to the exigencies of group life. We shall be primarily concerned with planned change. The entire section is introduced by a discussion of power, a basic consideration in relation to planned changes in group composition.

Power

Lewin (1951) has defined the power of b over a as the maximum force that b can put on a toward some region relative to the maximum resistance that a can mobilize against b's force. Cartwright (1953) has used this concept to describe some of the consequences of power in relatively permanent groups, or as used here, in closed groups. He notes that a high degree of power of b over a carries potential whether or not b has ever used his power. In closed groups, b's power may be exercised either in the present or in the future.

Thus, in closed groups, any act between a and b potentially has consequences for the power relationship between a and b in the future. On the other hand, in open groups, either a or b may be removed from the group or may leave the group voluntarily. Either of these contingencies tends to reduce the power aspects of the relationship. Even the possibility that a or b may be removed, necessarily reduces the length of time over which either person is able to impose sanctions on the other.

Moreover, the person on whom sanctions are being directed may be removed from the group and the other person's sphere of influence; thereby, in Lewin's terms, increasing the resistance that the person can mobilize against the other's force by withdrawing from the field. Of course, to counteract the possible reduction in length of time in which sometime may be exacted in open groups, the sanctions may become more severe and immediate in open groups.

It may now be hypothesized that in a group in which personnel are constantly changing, a power hierarchy tends to be dysfunctional. A power relationship implies an unbalanced interdependency among the group members. For example, since the member occupying the central position in a communication network tends to be perceived as the most powerful (Leavitt, 1951) and since centrality in a communication network and the amount of information available to the member are associated (Shaw, 1954), it seems reasonable to predict that information storage is one of the functions of the central or power figure in the group.

If, now, the central figure is removed or replaced, the group suffers from an immediate and disproportionate loss of information, and during a period of transition of leaders, the group may be expected to be heavily taxed in its efforts to maintain a relatively constant level of performance. Thus, open groups are compelled to be prepared for personnel changes and to develop a structure which permits ready adaptation to group changes with a minimum of interference with the group's performance. It is proposed that such a structure will involve a minimum of power relationships among the group members and a more equal distribution of information. This may be contrasted to closed groups which tend to construct highly specialized role structures (Heinicke & Bales, 1953; Hall, 1959) which in turn tends to increase the group's efficiency but tends to reduce its flexibility.

These considerations of power relationships in open and closed groups immediately suggests that these two different group conditions probably demand two very different leaders both in terms of the preferences of the group's members as well as in terms of group performance. For example, in order to avoid costly lags in group productivity in the event of changing leadership, it would seem safe to speculate that a leader of open groups in contrast to the closed group leader should encourage shared participation in the leadership functions.

Congruent with the previous arguments concerning the necessity for diffusion of power in open groups, it is hypothesized that the classical two-versus-one relationship will occur less frequently in open; three-person groups than in closed, three-person groups. Again, the necessity of dramatic realignments following the addition, replacement, or removal of personnel will tend to inveigh against the coalition phenomenon in three-person, open groups.

Power and the Newcomer

Some particularly unique power considerations arise with regard to the newcomer and imminent egressor under open-group conditions. By definition, the newcomer has recently been a member of another group; oft times a group quite similar to the host group. At the very least, then, the newcomer possesses a more extended frame of reference than those members of the host group who have worked exclusively within the boundaries of the host group. In terms of interpersonal evaluation, the newcomer is in a position to make intra-group and inter-group comparisons among the group members. Similarly, the newcomer is in a position to render invidious comparisons between the host and donor groups; but, of course, the group is in a similar position if the member is a replacement (Gouldner, 1954).

Various sub-groups among the main body may become concerned as to which sub-group the newcomer will cast his lot: for by becoming aligned with one or the other of the various informal and sometimes competitive or even hostile sub-groups of an organization, the equilibrium of forces within the host group may be threatened. Thus, the allegiance of the newcomer may be actively solicited by each of the sub-groups, and the newcomer through his position as an uncommitted member and perhaps a pivotal member is accorded a strategic power role in the group.

Moreover, it has been demonstrated (Wright, 1942) that the newcomer tends to be regarded as a guest rather than as a regular member during the initial phases of adjustment. The prerogatives of the guest being to some degree inviolable, the newcomer is thus in a position where the regular members may find it necessary to defer to the newcomer's wishes.

A peculiar source of power resides in the position of newcomer from yet another unexpected source. To reiterate, the host group is obliged to react toward the newcomer as toward a guest. If then, the "guest" should depart unexpectedly soon after his arrival, the host group would be somewhat embarrassed publicly. Outgroup members may tend to interpret the events as a violation of the guest prerogatives.

It must also be noted, that in the early phases of the new relationship, the newcomer is often not as totally committed either financially or psychologically to the new group. Therefore the newcomer is more mobile in a variety of ways. Mobility, it will be shown, is related to power.

However, once the newcomer has been assimilated and categorized with respect to some of the major dimensions of personality or subgroups in the organization, the newcomer loses a degree of power associated with individualistic behavior. It is assumed, here, that a degree of power resides

in the role of stranger if only by virtue of the fact that individuals can predict the stranger's behavior with a minimum of certainty. Reference is made here to game theory. The stranger in these terms is resorting, so far as the host group members are concerned, to relatively random behavior. The older members are themselves more predictable, and in fact, are constrained to be in relation to their position and role in the group. Thus, the regular members are more vulnerable to various game strategies than the newcomer.

In general, some of the power advantages of the newcomer have been outlined. Conversely, various negative power components are inherent in the role: (a) lack of knowledge of the informal group structure (b) cautious behavior to preclude premature and erroneous evaluations (c) unfamiliarity with group norms (d) inability to check the validity of personnel evaluations with other members.

Power and the Egressor

Another role peculiar to open groups is that of the egressor: the member whose departure is imminent. In contrast to the newcomer, it is hypothesized that the power of the egressor diminishes directly in relation to the remaining membership time. Group tenure and power are directly related.

In Lewin's terms again, since the egressor (E) will depart on a given date, the group's ability to resist forces emanating from E may be maximized through certain strategies. For example, the group may delay reaching a decision or acting upon a decision until after E's departure. E may even be omitted from the decision-making group.

By the same token, however, E can resist forces emanating from the group. Thus, in military circles the phenomena of reduced motivation to action or increased resistance to group pressure as the enlistment period

draws to an end is referred to "stacking arms" or the "going casual." Moreover, E is a potential threat to the donor organization. Since his loyalties are indeterminate, a marginal man as it were, E may be free to reveal negative aspects of the donor group without fear of sanctions.

Although these propositions are largely concerned with individuals group members, they may also be extended to the groups as groups. For example, a small manufacturing unit may encounter fewer problems of labor-management relations since the parent organization may abandon the operation at a lower cost. Here mobility of the manufacturing plant presents a departure threat to the bargaining labor group which may be less mobile for a variety of reasons to be discussed later. Thus again mobility carries power overtones.

The power of E is contingent upon at least two other qualifications (a) the characteristics of the group which he is expected to join and (b) the probability of a replacement. If E is to be replaced, it behooves the group to react to E in terms of the position occupied, since adjustment problems during the transition period will be minimized if the position remains active. If, on the other hand, the position is to be eliminated from the organizational structure, E's power will be minimized during the final phases of transition.

The nature of E's host group must also be considered in relation to E's penultimate power. It may be hypothesized that E's power is directly related to the power of the host group in relation to the donor group. The rapid diminution of the power of the member approaching retirement is relevant. Since the retiring member usually does not rejoin an organized social unit, power derived from organizational affiliation is withdrawn. On the other hand, if E is to join another group whose area of influence extends to the donor group, E's power probably does not decline to the same degree or rate. In this regard, it would be helpful to deduce the power path of leaders and

other group members as they approach retirement. For example, assuming the power path decelerates, at what point is the change first observed by the members and E and what is the nature of the deceleration curve?

In a very general sense then, it is proposed that future mobility and past mobility are related to the power of an individual in the group. The nature of the power is qualified by some of the conditions discussed here.

The Departure Alternative in Open Groups

As has already been indicated, a fundamental characteristic of open groups is that a flow of members into and from the core of the complex is expected, happens, or is possible. It is the last qualification with which we are concerned in this section.

At the gross level of abstraction, organizations may be differentiated with respect to the ease of exit. In a sense, this is merely a special case or emphasis of the general open group classification; but a number of ramifications emerge which are relatively specific to this attribute.

Organizations which are relatively difficult to leave are readily recalled: a prison, mental institutions in some cases, hospitals, military groups, an island community or isolated community in general, and perhaps some nations. What, now, are some of the social-psychological consequences of barriers to departure or ease of departure?

Here again, we will invoke a decision-making framework. In general terms, the option to leave the group presents an expanded range of alternatives to the decision-maker; the individual can withdraw membership. While relatively little research has been concerned with the range of alternatives in a decision-making situation a number of hypotheses are suggested.

As the number of alternatives are increased, in a decision-making

situation, the degree of conflict is intensified. Thus, the introduction of the departure alternative increases the degree of conflict for the group members.

March and Simon (1958, p. 58) have speculated that, "the greater the number of perceived alternatives to participation available in the external environment, the less important the consequences associated with variations in conformity to organizational demands." For example, they hypothesize that the greater the number of unemployed workers the fewer the perceived alternatives to participation.

It has also been hypothesized (Ziller, 1955), that an expanded range of alternatives on scale of judgment is associated more frequently with a decision of superior quality. The rationale for this proposition rests in the assumption that when the probability is greater that the most superior decision will be included in a relatively heterogeneous and expanded range of alternatives than in a relatively restricted and homogeneous range of alternatives. In terms of the decision of group membership, it may be hypothesized that an increase in the number of alternatives available to the individual will lead to a superior decision and perhaps to a more personally satisfactory decision.

Here we are assuming that self-determination generally results in increased satisfaction or that the denial of the alternative of departure exacerbates the desire to depart. In this regard, however, the question arises as to the curve of satisfaction on the number of alternatives increases from one to let us say, ten. But this is subject to empirical test.

Four variations in the initiation of change must be considered: (a) only the individual member may initiate change in group membership and group approval is not required; (b) only the group may initiate change proceedings

for the individual; (c) either "a" or "b"; (d) both the individual and the group must agree on change proceedings.

It is immediately recognized that these four conditions describe the focus of power for initiating membership changes. Condition "d" probably requires an arbiter. Here, one is reminded that the diverse divorce laws throughout the world may be conveniently categorized according to these separation conditions.

Given condition "a", the individual member may be expected to retain group membership as long as his needs are satisfied to a greater degree by that group than by any other group in which membership is available. The member is in a buyers market, as it were. Moreover, it is difficult to impose sanctions on group members under these conditions. Assuming that membership in similar groups are available, the individual is free to withdraw membership or retain membership but withdraw from active group participation. Moreover, if additions are precluded and replacement is the only possible means of membership change, the power of the members under these conditions is enhanced. One is reminded here of the United States Supreme Court particularly under the Roosevelt Administration, or a college professor under tenure laws.

The power of the individual under condition "a" derives from several sources. If the individual has assumed a position and role of responsibility in the group, the group has become, by definition, dependent upon this member, to a degree. Thus, if a responsible member of the group considers removing his skills from the group, the state of equilibrium achieved by the group is threatened. Of course, the loss to the group is in proportion to the difficulty of finding a replacement. However, the longer a member remains in the group, the more likely a group is to become dependent on the member,

if only in the way of group memory or the idiosyncratic interdependencies of the group members.

As has already been suggested, the departure of a single member tends to disturb the equilibrium of the group. Now, during the period of transition prior to achieving equilibrium at a new level and the accompanying difficulties, the departure of other members may be precipitated. In the eyes of a potential egressor the difference between the difficulties of transferring membership to another group and adjusting to changes in membership in the immediate group are less than the differences between the difficulties of transferring membership to another group and adjustment in a relatively stable group. Thus, the difficulties usually perceived in changing group membership are relatively lower once changes have taken place in the core group.

Finally, the power of the members of groups under conditions "a" derive from the threat to the group image. When a member leaves under conditions "a", the departing member communicates, in effect, to the other members and other potential members that the group did not satisfy his needs, and, by generalization, may not satisfy the needs of other members as well as some other groups in which membership is available.

Under the "b" conditions of membership change, the group may be said to retain each member for that period of time that the individual satisfied the needs of the group better than any other potential member and at the lowest cost to the group. Here, then, the group is in a buyer's market: departure under conditions "b" connotes individual inadequacy in contrast to conditions "a" which connotes group inadequacy. Thus, powerful sanctions are at the disposal of the group, and extreme pressure toward conformity may be expected.

This condition may be observed in cultures where only the male can initiate divorce proceedings, or in a military setting during periods of conscription, or in

general under circumstances where the group holds precedence over the individual. Of course, the power of the group under these conditions is circumscribed in part by the availability of personnel. Thus, for example, with reference to the military setting, pressure toward conformity to group norms probably varies directly with the method of personnel procurement; that is, whether the manpower is conscripted or are largely volunteers.

The power of the public school with regard to discipline presents a similar problem. Since the student can be expelled only under severe circumstances, the ability to exert strong pressures toward narrow rules of behavior is hamstrung to a degree.

Under conditions "a" the cost of departure in terms of the individual may be discounted. Under conditions "b" the cost of departure in terms of the group may be discounted. Under condition "c" a game theory model obtains. The cost and rewards to the group and individual are under constant assessment; and it may be predicted that a considerable amount of energy is expended by the parties to assess there relative positions in order to remain in a bargaining position. Neither the group nor the individual can relax their continuous surveillance procedures, the other may be probing for an advantage.

Under condition "d" the game theory model still applies, but the decision in terms of costs and rewards are usually arrived at by means of arbitration with at least a third party. By this means, individual power strategies are circumvented or at least muted.

Each of these conditions for departure also are related to conditions for joining the group. For example, it is imminently probable that the decision to join a group under "b" departure conditions is entered into with greater deliberation than under "a" departure conditions since a greater degree of personal commitment is involved.

Similarly these same departure conditions are related to techniques of personnel selection. A group which can discard personnel with relative impugnity and minimum difficulty is less likely to be concerned with selection techniques. The on-the job situation provides a convenient selection criterion under some circumstances.

The decision of a member to leave the group in favor of another group may have an extensive impact on the group from yet three other points of view. As is indicated by the opening phrase, favor of, the decision to leave the group of origin may be perceived as unflattering to the donor group and flattering to the host group since it indicates a preference for one group over another at a very gross level. This latter hypotheses is documented in part by Aplow and McGee in the Academic Market Place (1958). The institution or position which a former academic colleague chooses to join or accept is perceived by the members of the donor group as inferior to that which he left.

However, when a former colleague leaves the group, this maneuver inherently enlarges the sphere of the members of the original group to include some members of the emigree's new group. The implicit derogation of the donor group through departure and the enlargement of the social world may tend to activate other departures from the initial group, particularly if several members leave simultaneously thereby creating an impression of down mobility in the original group.

Finally, the departure of a member, and particularly the leader, may precipitate a concatenation of changes in the organization for the organization may be less reluctant to institute changes. Ideas and complaints long held dormant in the minds of members and administration may now find expression. Since a reorganization is required in any case with the changing group membership, a thorough overhaul may be facilitated.

Of course, knowledge of this change tendency may cause group members and

administrators to discourage membership changes fearing that other changes will be stimulated which will retard the group's normal work procedures. Thus, a membership change is perceived more seriously than it would be per se, were it not that it provides a point of origin and stimulus for further change.

The Strategy of Personnel Changes

Problems associated with changing group membership have probably been recognized for centuries. The discovery of the dynasty rule and premogeniture principle to the succession of kings was undoubtedly a response to an awareness of succession difficulties.

Machiavelli (Cerca, 1532) in The Prince recognized the problem and described a strategem whereby the Prince succeeded to the throne of a newly conquered kingdom, enforced drastic changes in government, and yet won the everlasting loyalty and gratitude of the subjugated people. To accomplish this, a myrmidon was first assigned as ruler by the Prince. This subordinate effected with dispatch and utter ruthlessness the changes deemed necessary by the Prince. When all had been accomplished to the Prince's satisfaction, the Prince entered the city, convoked the people along with the myrmidon, and slew the scoundrel before all as an act of justice and atonement; a social gambit, as it were.

The ubiquitous nature of the personnel change problem finds expression in the gnome "Never change horses in the middle of a stream." Finally, an old English sage has advised "Never marry a widow unless her husband was hanged." It is curious to note that the latter bit of wisdom is supported by Gouldner (1954) who refers to the tendency to compare the replacement unfavorably with the departed member as the "Rebecca Myth". The tendency for widows to exaggerate the virility of their late husbands (Bernard, 1956) may also be sited in support of this last hypothesis.

Thus, a more systematic analysis of some of these ancient bits of wisdom

may prove productive. The dynasty and premogeniture methods of succession immediately suggest, for example, a decision-making model in which an automatic decision-making device is used. By imposing an automatic decision-making device, internicine affairs are avoided and the state is not vulnerable during an unduly protracted period of interregnum. Thus, in contrast to a dictatorial form of government, democracies have institutionalized an automatic succession procedure which presumably insures a more stable organization over time. Other automatic succession procedures include promotion in accord with longevity or age, the exclusion from consideration of members of the group because of such visible characteristics as sex or race, and random selection by lots.

As was suggested earlier, change per se is hypothesized to be disliked by some individuals under most circumstances. In addition to the explanations proffered earlier, speculatively, changes in personnel may be perceived unfavorably in general because it reminds one that everyone is replaceable or will be replaced, including oneself. The generalized anti-change disposition may be displaced toward the newcomer, the characteristics of the newcomer notwithstanding. However, if the replacement is delayed (a period of mourning, as it were, in which it is taboo to replace the departed member) the recognition of the need for a replacement may surmount the antipathy toward changes in personnel and counteract the so-called "Rebecca Myth" phenomenon.

In general, it is hypothesized that a newcomer will be assimilated more readily by groups in which there is a recognized need for an additional member. It may be assumed, for example, that members of successful groups in contrast to those in groups that have experienced failure perceive their group as a self-sufficient, self-contained, and complete social unit. The introduction of a new member into such a group may precipitate examination of, and changes in the organization, structure, the methods of sharing group rewards, and the group's modes of adjustment

to its environment. Thus, to a successful group, the newcomer represents a potentially disruptive force threatening to stimulate changes in positively reinforced behavior. Unsuccessful groups, on the other hand, may be expected to perceive the newcomer as a possible resource and as an agent or catalyst of change in a situation where change is needed.

It will be assumed that there is a tendency to compare the newcomer invidiously with the member replaced. It is also quite conceivable that if the newcomer is more favorably treated than the departed member, the assimilation process may be further retarded and the change situation further exacerbated by the suggestion that one's replacements will be more positively treated than oneself. In open groups the preferential treatment of the latecomer may be interpreted as evidence that a premium is placed on mobility rather than loyalty.

Still, in some respects, the replacement's role is preferable to that of the addition: The replacement occupies a position vacated by his predecessor; a position to which communication channels have been previously established. For the addition, the position must be defined and established.

More simply, perhaps, the replacement represents a less abrupt change both for the newcomer and the group. The position assignment permits the new member to perform various group functions and accumulate idiosyncratic credits (Hollander, 1958) which allow for greater individual adjustment following the initial orientation phases of the assimilation process. Stated otherwise, the position assignment enables the newcomer to focus on the task demands without unduly complicating the situation with a confusing array of interpersonal considerations which can only be resolved over time.

Membership transfer may also be facilitated by avoiding an abrupt exodus. This may involve the provision of time to complete ongoing activities or transfer responsibility for these activities to other members of the donor group. A period of "independence training" may also be necessary.

After having associated with a given group for a period of time, a series of interdependent roles tends to become established (Heinicke & Bales, 1953; Hall, 1957). Various skills are relegated to members who are most qualified or available. In transferring membership to a new group, it is unlikely that the same kinds of specialization will be possible or that the same kinds of resources will be available. Thus, it behooves the departing member to develop a basic competence in some of the skills or knowledge areas related to his primary capability in order to provide a degree of flexibility in adjusting to the new position and role. During this transition period, the mobile individual may be described as a marginal group member with the attendant problems of placement of loyalties and the locus of authority.

The abruptness of change may also be palliated by increasing the number of contacts between the prospective new member and the host group and simultaneously decreasing the number of contacts with the donor group. This technique has been advocated by social case worker in an adoption situation where the child is initially under the care of a foster parent (Gerurd & Dukette, 1954).

The situation faced by a young adult is instructive here. Three subgroups are involved: the family, the host group (adult society in terms of a work group or community), and the peer group which is formulated largely as a result of the education system which isolates this age group from both the parents and community. Increased contacts between members of the community at large and the young adults may tend to reduce the anxieties of both the newcomer and the host group members.

Similarly, in order to reduce the abruptness of change ("cultural shock") from institutional life to civilian life, "half-way" houses have been developed for persons who have been discharged from penal institutions. In this interim period, the newcomer to the community has the support of a number of peers with similar problems.

The use of interim groups to facilitate transfer between groups provides opportunities for exchange ideas concerning mutual problems and the discharge of anxieties through catharsis. However, prolonged attachment to this mediating group may also delay the assimilation process.

A variation of the interim group device for facilitating assimilation or transfer is the assignment of two members simultaneously into the same host group. However, if the number of newcomers in relation to the number of members in the host group approaches a substantial percent of the host group, a disintegrating effect may displace the planned assimilation effect (Anonymous, 1946). The determination of the optimum ratio of new members to regular members is amenable to empirical test.

The use of sectarian groups to cushion the "cultural shock" of rural migrants to urbanism was studied by Dynes (1956). Using attitude measures, it was found that the sect does cushion the shock if the migrant is from a lower socio-economic level.

Implicit in the suggestion of the use of interim groups of peers to facilitate adjustment in the host group is the assumption that the members undergoing change require the availability of an objective, non-evaluative council; guidance personnel for high school seniors; sociologists, psychologists, or social workers for prisoners; a minister for the moribund member of society. If such a well informed person is not provided, the mobile individual will have no recourse other than to depend upon less reliable sources of information.

A non evaluative counsellor may also be required during the newcomers period of assimilation in the new organization. Peers may provide some assistance but a specialist fulfills a specific function. For example, dissatisfaction with an initial assignment in an industrial unit may lead to a resignation whereas a transfer may be easily arranged by a staff member outside the group to which the newcomer was assigned.

It has recently been demonstrated (Aronson & Mills, 1959) that the difficulty of achieving group membership is directly related to the perceived value of the membership. This relationship is explained in relationship to Festinger's theory of dissonance-consonance (Festinger, Riecken, Schacter, 1956) in a decision-making situation. It is assumed that there are unattractive as well as attractive aspects of membership in any group. If a person has undergone an unpleasant initiation his cognition that he has subjected himself to an unpleasant experience in order to achieve group membership is dissonant with the awareness that some aspects of the group are unattractive. Consonance can be effected by either minimizing the initiation or over emphasizing the attraction of the group. As the severity of the initiation increases, it becomes increasingly difficult to ignore or minimize the negative aspects of induction leaving only the alternative to exaggerate the value of the group.

College women who volunteered for the experiment were assigned randomly to one of three experimental conditions: severe initiation, mild initiation, and a control condition. Under the severe initiation conditions the female subjects were required to read embarrassing material before joining the group. Under the mild conditions, the material read was less embarrassing. The control group was not required to read anything. Each subject then listened to a recording that appeared to be an ongoing discussion by the group in which she had just become a member. Finally, the subjects completed a questionnaire evaluating the recorded discussion. The results clearly verified the hypothesis. However, an alternative explanation is possible.

The induction procedure varied in the intensity of emotional involvement. If, then, the subjects assumed that some of the members of the group had previously undergone a similar unique experience, the initiation experience may simply have been

perceived as a unique experience which the members had in common, a condition generally conducive to cohesiveness.

It is also hypothesized that in open groups in contrast to closed groups a change in membership is not as likely to assume undue importance or need not be perceived as readily as a calculated reorganization of manpower. Thus, strategic membership changes can be made with greater ease in groups which experience membership changes routinely. For example, a sorely needed change in leadership need not prove embarrassing to either the leader or the group under conditions where changes in group membership are regular occurrences.

The Assimilation of the Newcomer in the Group

Various aspects of the process of the assimilation of the new member discussed under the topics of "Power" and "Strategy Effecting Personnel Changes." Here the assimilation process will be considered.

Assimilation is defined here as the process by which a newcomer establishes a positive affective identification with the host group; and the host group, in turn, comes to perceive the new member as an integral part of the social unit. For more than forty years, the theoretical approaches to the newcomer phenomenon have been based largely in the writings of Simmel (Wolff, 1950). In general, Simmel described the advantages of a stranger in a comparatively stable society. The stranger's or "potential wanderer's" advantages were said to derive from the following characteristics of his position in the group: (a) mobility, (b) objectivity, (c) confidant, (d) freedom from convention and (e) abstract relations. With regard to mobility it was said that the stranger may interact with the members of the group but is not intrinsically related to any member through kindship, locality, or occupation.

Moreover, it is more probable that a stranger can adapt an attitude of

objectivity with regard to group practices since he is not committed to the pressures toward group conformity. In support Simmel sites the practice of ancient Italian cities to appoint judges from outside their realm because endogenous citizens were not free from family entanglements and party interests. Related to the objective role, is the observation that strangers (especially the stranger passant) often are trusted with confidences which are withheld from more closely related and stable members of the group.

In addition, the stranger is not constrained by convention or precedent. Finally, Simmel describes the tendency to perceive strangers in more abstract terms. With the stranger, one has only certain general qualities in common, whereas, with more closely related group members, our relationships are more detailed.

In the United States, the social scientists concern with the phenomenon of the newcomer in the group may be traced at least to the time of the formal recognition of American Sociology. The original justification for awarding academic status to Sociology was the study of immigration, a problem with which no other social scientist dealt at that time (Shils, 1948). More recently, the massive population shifts particularly to Israel, Australia, and the United States and within the United States have stimulated renewed interest in the problem of the newcomer and the host group under conditions of changing group composition (Eisenstadt, 1951, 1952; Richardson, 1957; Taft, 1957; Weinberg, 1953). Within the United States alone, it has been estimated that one out of every five families move each year (Rossi, 1955).

The early immigration studies relied perforce on historical documents, case studies, demographic data, and informal observations. The more recent studies tend to rely on survey research techniques. Other investigations have employed criteria of assimilation such as vocabulary changes (Richardson, 1957) and objective measures of status (Eisenstadt, 1951). Moreover, some of these programs have developed well formulated theoretical framework from which, presumably, experimental programs will emanate (Taft, 1957).

Summarizing some of the results of these later immigration studies, it has been found that:

- (a) "The relations between the primary groups and the new social and cultural systems are mediated by elites..." (Eisenstadt, 1951)
- (b) "...successful adjustment is associated with free (rather than forced) immigration reasonable expectations of new life conditions, weak ties with former environment, and youth." (Eisenstadt, 1956)
- (c) there is "...a strong positive correlation between the general state of health and adjustment to the new country..." (Weinberg, 1953)
- (d) "The degree of family cohesiveness, the nature of the community from which the immigrants had come, sex, age, and marital status were positively related to the kind of attitude possessed by the immigrants." (Eisenstadt, 1952)
- (e) "Greater changes takes place between the seventh and twelfth month after immigration than between the eleventh week and the seventh month (Richardson, 1957).

It is apparent that these findings concern, almost exclusively the characteristics of the newcomer in a given culture or host group. Information is lacking which compares the assimilation process in groups with varying characteristics. This is one of the major limitations of immigration research with reference to the more general problem of the assimilation of the newcomer in the group. Necessarily this limitation of the immigration studies also restricts the scope of the theoretical structure based upon these studies.

The research discussed up to this point has concerned the macrocosmic problems of immigration. However, within recent years, research has become at once more microcosmic and more generic; the newcomer phenomenon has been explored with reference to smaller social units and a wider variety of milieu. Studies were found

concerning the assimilation of the foreign college student (Zajonc, 1952) the new member of the United States Supreme Court (Snyder, 1958), the new recruit in an Army platoon (Stouffer, et al, 1949), the new business leader (Christensen, 1953), and several comparative studies of animal behavior (King, 1954; Potter & Allee, 1950).

The microcosmic approach to problems of changing group composition enables the experimenter to employ small group techniques which have been developed rather extensively during the last fifteen years. Recognition of the advantages of small group research methods in this area have been remarkably tardy. Yet, there have been exceptions. In an early experiment by Lewin, Lippitt and White (1950), the problem of leadership succession was explored, but only as a peripheral interest.

In 1955, Rose and Felton reported a novel laboratory experiment from which it was concluded that regular members tend to be more creative than new members. More recently, Theodore Mills (1957) reported a laboratory experiment in which structure of the host group was varied. Though the findings of this latter study are difficult to interpret, the study provides evidence that group integration reduces the anticipated value of the newcomer. The most recent study in this area was conducted by Aronson and Judson Mills (1959) revealed that group membership is more highly valued in groups where the entrance requirements are higher.

The results of a program of research concerning the acceptance of a new reference group has been reported recently by Ruth E. Hartley (1958). In general the results were derived from a response-response experimental design in which individuals in a new reference group (college or the Navy) completed questionnaires concerning individual characteristics on the one hand and acceptance of the new reference group on the other. The following hypotheses were supported.

Acceptance of a new group as a reference group was found to be associated with:

- (a) a tendency to perceive the members of that group as exhibiting similarity to each other and to the observer in tastes, goals, and objectives, and

as offering each other mutual support.

- (b) "tendency to perceive the group as a unique entity."
- (c) "a conviction of clear awareness of the mechanics and means by which the group functions."
- (d) the host groups, relative position in the individuals hierarchy of groups.
- (e) "...with the number of group memberships already held..."
- (f) positive expectations of a group.
- (g) the general tendency to associate with groups.
- (h) "...relative length of anticipated deviation of control with group..."
- (i) positive rather than negative general social response patterns.

Again it is noted that the results of this series of studies concerns exclusively the characteristics of the newcomer to the group. Since the characteristics of the host group are not varied under this type of experimental design. A broader perspective of the newcomer phenomenon is demanded.

As a preliminary step in the analysis of the newcomer phenomenon, a framework of the salient components in the assimilation process may facilitate the explanation of more comprehensive experimental degrees. The components of the phenomenon appear to be (a) the characteristics of the host group (b) the characteristics of the donor group (c) the characteristics of the newcomer (d) the relationship between the host and donor group, (e) introduction and orientation procedures involving the newcomer and (f) the bases for changes in group composition.

The Host Group

In analyzing the various components of the assimilation process, we will have recourse to a decision-making model in which the rewards and cost relative to the newcomer and the host group are evaluated in juxtaposition. With reference to the personality of the host group, it is broadly hypothesized that sharply defined group

boundaries tend to increase the cost of assimilation of new member both to the member and to the host group.

The hypothesis is almost trivial for its simplicity. The hypothesis simply holds that a broadly defined category can embrace a great many more objects than a narrowly defined category, and the cost to the group of establishing the criteri-ability of the object is diminished thereby reducing the difficulty of assimilation both for the object and the perceiver (local group). A wide category host group, by necessity, places the onus of definition of role on the new member rather than on the system. Since the selection science is rather inexact, this provides a degree of tolerance for the system which should facilitate integration. Moreover, by broadly defining the group, a set for tolerance rather than a set for criti-cism is created. The newcomer is not surveyed with a jaundiced eye but rather with a positive attitude toward idiosyncracies.

A wide-category group as defined here may be created in several ways. In many respects, the open group derives from the wide-category concept. An open group is defined by the personnel which the group had had, does have, and will have and is necessarily broad in scope. Thus it may be anticipated that new members are more readily assimilated in open groups. In a closed group the newcomer enters a far more complex, interrelated system of elements than in the open groups, and assimi-lation is accordingly accomplished with reduced facility.

Group failure can be interpreted as demanding an expanded definition of the group in terms of the need for additional personnel resources. It may be assumed that members of successful groups in contrast to those of groups that have experienced failure perceive their group as a self-sufficient, self-contained, and complete social unit. The introduction of a new member into a group may precipitate examina-tion of and changes in the organizational structure, the methods of sharing group rewards, and the group's modes of adjustment to its environment. Thus, to a successful

group, the newcomer represents a potentially disruptive force threatening to stimulate changes in positively reinforced behavior. Unsuccessful groups, on the other hand, may be expected to perceive the newcomer as a possible resource and as an agent or catalyst of change. Thus, it is hypothesized the newcomers are accepted less readily by successful groups than by groups with a history of failure.

A heterogeneous group of persons is necessarily more broadly defined than a homogeneous group. Thus, it is hypothesized that heterogeneously composed groups assimilate members more readily than homogeneously composed groups. By way of explanation, a quasi-statistical theory may be invoked. Quite simply, the probability of becoming a deviate in a group is greater in a homogeneously composed group as compared with a heterogeneously composed group. Or from the point of view of the newcomer, the probability that the newcomer will be required to change his behavior to a great extent upon entering a new group is greater in a homogeneous group than in a heterogeneous group.

Another way of creating group conditions conducive to facile assimilation suggests itself. Recently, Pettigrew (1958) described the measurement of a "category width" variable. When subjects are asked to estimate the extremes of a number of diverse categories as, for example, the length of whales or the annual rainfall in a given city, a significant tendency to be consistent in their category ranges was found. The subjects tended to be consistently broad, medium, or narrow in their estimates of the ranges of the phenomena under consideration. Although the inter-personal-ratings correlates of the instrument have not been explored to date, it may still be hypothesized that groups composed of members with wide category width indices as opposed to those with low indices will tend to assimilate a new member more readily. Similarly, a newcomer with wide category width tendencies may also be expected to accept membership in a new group more rapidly and thoroughly.

The Donor Group

The characteristics of the donor group in relation to those of the host group is a second component in the assimilation process. Again the quasi-statistical theory may be invoked to support the hypothesis that greater similarity between the host and donor groups tends to result in reduced assimilation difficulties. Again, if the host and donor groups are similar with regard to culture, goals, personnel, and structure, transition difficulties are avoided and the need for marked changes either by the newcomer or group are omitted.

This hypothesis is supported in part by the results reported earlier with reference to the immigration studies in Israel and Hartley's studies covering the assimilation of the new college student. Moreover, Wentholt (1956) in studying the adjustment of Dutch immigrants to New Zealand suggests that successful personality readjustment of an immigrant to a "host" society varies with the degree of self-reorganization required by that society and the degree of preparedness on the part of the immigrant to have such reorganization take place.

Still, the shadow of the donor group tends to retard the growth of an integral relationship between the newcomer and the host group. In Christie's (1954) study of the transition from civilian to Army life, it was concluded that greater distance from home and limited contact with family and friends are more conducive to adjustment to military life during the basic training phases of the program. The expeditious use of isolation for facilitating the assimilation process of newcomers to the United States Coast Guard Academy is discussed by Dornbusch (1955).

The Newcomer

The last major component of the assimilation process is the newcomer. As indicated earlier, because of the ease of study, this component has been subjected to detailed analysis. Again, the studies by Eisenstadt and Hartley are cited. Without repeating the findings in detail, these studies suggest the existence of a cosmopolitan personality, a complex of behaviors which enable the individual to adjust to a variety of new social situations of changing social environment.

Merton's analysis of the "cosmopolitan" as opposed to the "Local" is pertinent here. The "cosmopolitans" had lived in a variety of places and were newcomers to the town. The "locals" were usually natives and had seldom been away except for brief periods. The "cosmopolitans" were not members of as many groups as the "locals." They stressed the importance of the qualities of their friends rather than the number of people they knew. Moreover, where the "locals" tended to join organizations for the purpose of extending their range of contacts, the "cosmopolitans" tended to join organizations in which special skills and knowledge were important.

It is quite conceivable, however, that the community behavior of these contrasting people stems from some underlying personality characteristics. In terms of the aforementioned studies the "cosmopolitan" appears to be a xenophile; is not grossly nostalgic or sentimental; is liberal; in perception and concept formation characteristically employs wide category width and a large number of categories rather than dichotomous divisions; views the world positively; tends to be a risk taker; is not cynical; and is not prejudiced. The "cosmopolitan" in contrast to the "local", is more highly transferrable and his abilities are more highly transferrable.

Transferability, implies, as a very base, a positive attitude toward change, or at least, a lower resistance to change. In addition, since a variety of new circumstances and persons may be encountered variations in which assume the characteristics of a normal curve, the probability of adjustment in new groups and a positive disposition toward changes is probably increased if the mobile individual is near the mean of the population in a variety of characteristics. Thus, if the normal population tends to be only moderately prejudiced toward Negroes, for example, the highly prejudiced or highly pro-Negro newcomer will tend to have more difficulty adjusting to and gaining acceptance in a number of groups. This may suggest that individuals who successfully adjust to a variety of new situations tend to be conformists in

relation to the behavior of the greatest number of persons in the population in which they are likely to move; just as the locally oriented individual is a conformist in relation to the behavior of the greatest number of persons in his immediate environment.

The aforementioned series of arguments also seem to suggest that the deviate will be better adjusted in a closed society than in an open society. Once the deviate has established a position in the group and the group has adjusted to his idiosyncracies, the group may be expected to function satisfactorily, unless changes in the situation occur. If the membership changes or if the deviate is changed to another group, a long period of adjustment may be anticipated.

An Overview

The foregoing presentation of a variety of considerations concerning changing group membership was merely an initial attempt to bring together and integrate a number of relevant findings and hypotheses. Upon reviewing the preceding pages, however, the writer was somewhat disturbed by the discursive description of the topic.

Perhaps a higher level of abstraction is indicated. For example, the open-closed group categories may be treated as subunits under the more general categories of "change" and "no change." Viewed in this way, change in group membership becomes merely one of a variety of changes which a group may initiate or undergo. Groups may also experience changes in the environment, changes in task demands, changes in the ages of the members over time, and changes in group processes or group structure including internal changes in power or status hierarchy. Thus, rather than being concerned with the characteristics of groups which readily adapt to changes in group membership, the problem concerns the characteristics of groups which readily adapt to changes in general, or the conditions (success or failure, for example) under which the group tends to alter its procedures, goals, leadership,

or even geographical location. But this is obviously another chapter.

Certainly, in its present form, this paper does not provide a detailed blue print for a research program. Still, a series of testable hypotheses were developed in the context of a broad working framework. Here, then, is a first approximation toward the systematic analysis of a ubiquitous social phenomenon, changing group membership.

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Power Relationships in Open and Closed Groups

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Power Relationships in Open and Closed Groups

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Center for Research on Social Behavior

The laboratory experiment described here was conducted in two phases. The first phase of the investigation concerned the congruence between the informal and formal power structures of open and closed groups. The second phase concerned the assimilation of high and low power replacements in open and closed groups.

The open-closed group concept derives rather broadly and only analogously from a general systems theory framework (Bertalanffy, 1950). A basic unit of this approach is a "system" defined as a "set of elements standing in interaction" (p. 23). Systems in this very general sense may be categorized as either open or closed. A closed system is considered to be isolated from the environment; new elements are excluded and the departure of elements is precluded. It is proposed that most living organisms are initially open systems since they are maintained "in a continuous inflow and outflow, building up and breaking down of components, neither being, as long as it is alive, in a state of ... equilibrium but maintained in a so-called steady state ..." (Bertalanffy, p. 23).

Extending this framework to social systems, an open group may be defined as an interacting set of persons in a continuous state of membership flux. Under these conditions of social metabolism, the elements of the complex are temporarily interrelated owing to periodic or frequent but unscheduled replacements, removals, or additions of elements. In closed groups, on the other hand, the elemental composition remains constant.

Lewin (1951) has defined the power of b over a as the maximum force that b can put on a toward some region relative to the maximum resistance that a can mobilize against b's force. Cartwright (1953) has used this concept to describe some of the consequences of power in relatively stable groups, or as used here, in closed groups. He notes that a high degree of power of b over a carries potential whether or not b has ever used his power. In closed groups, b's power may be exercised either in the present or in the future.

Thus, in closed groups, any act between a and b potentially has consequences for the power relationship between a and b in the future. On the other hand, in open groups, either b or a may be removed from the group or may leave the group voluntarily. Either of these contingencies tends to reduce the power aspects of the relationship. Even the possibility that a or b may be removed, necessarily reduces the length of time over which either person is able to impose sanctions on the other. Moreover, the person toward whom sanctions are being directed may be removed from the group and the other person's sphere of influence, thereby, in Lewin's terms, increasing the resistance that the person can mobilize against the other's force by withdrawing from the field.

It was proposed that in a group in which personnel are constantly changing, a power hierarchy tends to be dysfunctional. A power relationship implies an unbalanced interdependency among the group members. For example, since the member occupying the central position in a communication network tends to be perceived as the most powerful (Leavitt, 1951) and since centrality in a communication network and the amount of information available to the member are associated (Shaw, 1954), it seems reasonable to predict that information storage is one of the functions of the central or power figure in the group.

If, now, the central figure is removed or replaced, the group suffers from an immediate and disproportionate loss of information, and during a period of transition of leaders, the group may be expected to be heavily taxed in its efforts to maintain a relatively constant level of performance. Thus, open groups with a formal power structure are forced to be prepared for personnel changes and develop an informal structure which permits ready adaptation to group changes with a minimum of interference with the group's performance. It is proposed that such an informal structure will involve a minimum of power relationships among the group members and a more equal distribution of information. This may be contrasted to closed groups with a formal power structure which may tend to construct highly specialized informal role

structures consistent with the formal power structure (Heinicke & Bales, 1953; Hall, 1959) which tends to increase the efficiency of the group but tends to reduce the group's flexibility.

Thus it is proposed:

Hypothesis 1: In closed groups or compared with open groups the informal power structure tends to be more congruent with the formal power structure. With reference to the replacement of members in the power hierarchies of open and closed groups, the previous arguments suggest that the informal structures of open groups in comparison with closed will involve less differentiated power roles. Thus, in open groups as compared to closed groups, the differences will be less pronounced between a high and low informal power structure. Thus it is proposed:

Hypothesis 2: The relative difficulty of assimilating a replacement who is to occupy a high as compared with a low power position is greater in closed groups than in open groups.

Method

Subjects

The 96 summer session students at the University of Delaware comprising the subject pool were assembled at random into 32 three-person groups homogeneous with regard to sex.

Procedure

The experiment was described to the subjects as a study of the decision-making products and processes of an organization. The three-person group was to represent three levels of management in an organization where department head "one" reports to department head "two", who in turn, reports to department head "three." Department head "three" was to be thought of as the person in charge of the entire organization.

The organization was presented with three decision-making tasks each of which involved an estimate of the number of dots on a briefly exposed slide. Following

the brief slide exposure, the members submitted individual estimates of the number of dots on the slide. Then the group was permitted ten minutes in which to discuss the problem through the medium of a standard note-passing device. When any member felt that he had discussed the problem for a sufficiently long period of time he was instructed to send a note to the experimenter saying "end discussion". When the experimenter received two such notes, the discussion was formally closed. At the close of the discussion period, the first level department head recorded the decision he or she personally considered correct and passed this recommendation to the second level department head. After examining this recommendation, the second level department head in turn sent his or her recommendation to the third level department head. The final organization decision was submitted by the latter department head, that is, the head of the organization. If the organization decision was not more than five dots above or below the actual number, all members of the organization were to be awarded 25 cents each at the close of the session. After the organization decision was announced to the members by the experimenter, then each member submitted a private estimate as to the number of dots he personally thought there were on the slide.

Under the closed-group condition, the members were merely informed at the outset that they would be presented with three decision-making tasks and that they were to follow the same decision-making procedures throughout the session. Under the open-group conditions the members received further instructions: "However, as sometimes happens in an organization, the membership will change some time during the next hour. More explicitly, some time during the decision-making sessions, one of you will be replaced by a new member."

After completing the second task, the groups under all conditions were informed that occasionally organizations undergo changes in personnel. Accordingly, one member from their organization was to be replaced at random by a new member.

The person to be replaced (either the high or low power member) was announced and the new member assumed the vacated position for the remainder of the session.

Measures

The dependent variable in both hypotheses is the relative power of the group members. It is necessary to distinguish between power attempts and the power accorded by the group members. Power attempts by the members were assumed to be reflected in the arc sine transformation of the percentage of the total number of messages in the group that were sent by each of the group members.

There were two measures of accorded power. The first was the arc sine transformation of the percentage of the group's notes received by each member occupying one of the various power positions. The second measure was the deviation of each member's original estimate from the group's decision. This latter measure was assumed to reflect the relative influence of the members on the group decision.

Two additional measures were derived from the data and were analyzed in an exploratory manner with respect to the independent variables: the individual members satisfaction with the group decision, and the difficulty encountered by the group in reaching a group decision. The former measure was derived from the absolute difference between the individual's post- group-decision estimate and the group decision. The latter measure was assumed to be directly related to the total number of messages required before the group reached a decision.

Results

The results involving the five dependent variables will be presented first with regard to the condition in which group membership remained constant (tasks one and two); then, with regard to the condition in which group membership was changed (Task three).

Table 1 presents a $2 \times 2 \times 3$ analysis of variance of the arc sine transformation of the percentage of notes sent to the three power positions during tasks one and two under the open-closed conditions. The interdependence of the power positions within the same group is a consideration within the statistical model as well as the repeated measures across tasks (Henderson, 1959). The results with regard to power were statistically significant ($p < .001$); and the interaction between power and the open-closed variable was significant at the .10 level of confidence. The lowest percentage of notes were addressed to the lowest power position, the highest percentage were addressed to the highest power position. The interaction effect appears to derive from the difference between the high and low power positions under the open and closed conditions. In opposition to hypothesis one, the difference in the number

of notes sent to the high and low power positions is greater under the open conditions than under the closed conditions.

Insert Table 1 about here

Table 2 presents a $2 \times 2 \times 3$ analysis of variance of the arc sine transformation of the percentage of notes sent from the three power positions during tasks one and two under the open-closed conditions. Again the design takes into account the interdependence of the group members as well as the repeated measures across tasks. The results with regard to power position were again statistically significant ($p < .05$) and indicate that power and number of notes sent are inversely related. The highest percentage of the notes within each group were sent by the lowest power member; the lowest percentage were sent by the highest power member.

Insert Table 2 about here

Table 3 presents a 2×2 analysis of variance for repeated measures (Henderson, 1959) of the total number of messages exchanged within each group during tasks one and two under open or closed group conditions. Interaction between group conditions and tasks was statistically significant ($p < .05$). Under the open conditions, the number of notes decreased from task one to task two; under the closed conditions, the number of notes increased.

Insert Table 3 about here

The results, regarding the analysis of the individual group members satisfaction or agreement with the group decision in reference to the open-closed, task, and power variables are presented in Table 4. The $2 \times 2 \times 3$ analysis of variance is the same model as that presented in Table 1. Although the results were not statistically

significant in any meaningful way it was noted that members of open groups tended to be more satisfied than the members of closed groups, particularly with reference to the second task. It was also noted that the medium power member generally deviated less than the high and low members.

Insert Table 4 about here

The results with regard to the member's influence on the group decision (deviation of initial individual estimate from group decision) were not statistically significant either with reference to tasks one, two, or task three. It was noted, however, that power and influence were directly related on task one. On task two Low still was least influential; but Medium was somewhat more influential than High. Finally in task three, Medium emerged more clearly as the most influential members. There was little difference between the influence of High and Low (see Table 5).

Insert Table 5 about here

A more detailed description of the data regarding task three is presented in Table 6. Again the statistical design is the same as that presented in Table 1. It was noted that the interaction between the open-closed and replacement conditions were statistically significant ($p < .10$). Under the description of the group decision from the initial estimates of the individual group members was lowest under the closed-replace-low-member condition (see Table 6).

Insert Table 6 about here

The analyses of variance and descriptive data concerning the member's post-group estimate deviation from the group decision on task three is presented in Table 7

with reference to the open-closed group conditions, high-low replaced member, and the member's power positions. Again the statistical design is that used in Table 1. Interactions between the open-closed and replacement variables and between the replacement and power positions were statistically significant at the .10 and .05 levels of confidence respectively. Under the open conditions the members accepted the group decision to a greater degree when High was replaced, under the closed conditions the members were more accepting when Low was replaced (see Table 7). Moreover, it was observed that Medium tended to deviate less than the other members when Low was replaced but deviated more than the other members when High was replaced.

Insert Table 7 about here

Table 8 presents a $2 \times 2 \times 3$ analysis of variance design similar to that in Table 1 of the percentage of notes (arc sine transformed) sent to the three power positions during task three under the open-closed conditions. Again, as in the earlier tasks, the results with regard to power were statistically significant ($p < .01$). The lowest percentage of notes were addressed to Low; Medium and High received approximately an equal proportion of the notes.

Insert Table 8 about here

Table 9 presents a $2 \times 2 \times 3$ analysis of variance design similar to that in Table 1 of the arc sine transformation of the percentage of notes sent from the three power positions during task three under the open-closed conditions. The results with regard to power were again statistically significant ($p < .01$) and the interaction between the power and replacement variables was statistically significant ($p < .10$). The lowest percentage of notes were sent by High; the highest percentage emanated from Medium. The interaction results tend to qualify these results, however.

Medium sent the highest percentage of notes when Low was replaced; whereas when High was replaced the highest percentage of notes were sent by Low, next by Medium, and the least by High. Another way of viewing these results, however, suggests that the replacement tends to send fewer messages than the more stable occupant of the power position.

Insert Table 9 about here

Table 10 presents a 2 x 2 analysis of variance of the total number of messages exchanged within each group during task three under the open-closed and replacement conditions. Interaction was significant at about the .05 level of confidence. Under the open conditions, more notes were sent when Low was replaced; under the closed conditions, more notes were sent when High was replaced.

Insert Table 10 about here

Discussion

Hypothesis 1: In closed groups as compared with open groups, the informal power structure tends to be more congruent with the formal power structure.

The evidence directly relevant to the first hypothesis involved the interaction between the open-closed and power position variables with reference to the dependent measures concerning power. Only with reference to the messages sent to each of the power positions (Table 1) was the interaction found to be statistically significant. The results, however, contradict the hypothesis. There was a greater discrepancy between the percentage of notes received by the High and Low members under the open conditions.

Evidence (Table 3) that the total number of notes exchanged increases from task one to two under the closed conditions and decreases under the open conditions may

also be cited in support of the contradictory hypothesis. Assuming that as the formal power structure becomes accepted the amount of interaction diminishes during a decision-making task (Heinicke & Bales, 1953) these results may suggest that a more formal power structure obtains and is exercised in the open hierarchical groups.

These findings suggest, counter to the initial hypothesis, that the informal and formal power structures are more congruent in open as compared with closed groups. Speculatively, it is now proposed that open groups adhere more closely to the formal power structure in order to facilitate anticipated changes in group membership. In open groups, however, idiosyncratic interdependence impedes the change-over process following the introduction of a new member. Thus, open groups seek to avoid pecking order trial periods following changes in group membership by assigning the new member to a formal position and the member is accorded, inherently, a degree of power congruent with the formal definition of the position.

In closed groups, on the other hand, the formal structure may give way to an informal structure which takes advantage of the peculiar skills and abilities of the members. For example, the power roles may be assumed by those who are best qualified or most aggressive.

In many respects these arguments form the bases for an etiology of depersonalization in bureaucracies (Merton, 1940; Gouldner, 1945). Merton (1940) proposes that the functionaries of a bureaucracy minimize personal relations and resort to categorization. The categorization tendency is presumed to develop from "the dominant role of general, abstract rules." It is now proposed that the norm of impersonality in relation to clients, members of the organization, and decisions is a function of a set toward changing group membership. Thus, if the peculiar skills and abilities of the members are utilized in the development of integrated group processes, the loss of a member and the subsequent replacement will necessitate a protracted period of adjustment, reassessment, and realignment of the group members. It may also be expected that

this condition will be exacerbated under conditions of frequent membership turnover or an extended organization structure across and among a large number of interconnected positions with limited autonomy.

For example, if decisions by one member of the organization are made which consider the special features of the individual case, a replacement will find it difficult to assume a similar role since, at the very least, individual perceptions are involved. Thus, in order to avoid any invidious comparisons with predecessors, a bureaucratic structure provides detailed decision-making procedures which provides a defence for the occupant of the position.

Hypothesis 2: The relative difficulty of assimilating a replacement who is to occupy a high as compared with a low power position is greater in closed groups than in open groups.

Necessarily, the evidence relative to the second hypothesis derives from individual or group behavior during task three. It was noted (Table 6) that the mean deviation of the group members' initial individual estimates from the group decision was lowest under the closed conditions when Low was replaced and next lowest under open condition when High was replaced.

In conjunction with these findings, the members tended to accept the group decision to a greater degree when Low was replaced; under the closed conditions more notes were exchanged when High was replaced. These three findings are consistent. Under the closed conditions where High rather than Low is replaced, more notes are sent, the members accept the group decision less, and there are greater differences between the group and initial private estimates. The results do not support hypothesis two but rather suggest that under the closed conditions the members have greater difficulty adjusting to the high-power replacement; under the open group conditions, the members have greater difficulty adjusting to the low power replacement.

Consistent with the results pertaining to the revision of hypothesis one, let it

be assumed that the formal structure is maintained to a greater degree under the open conditions as opposed to the closed conditions. In view of this hypothesis, the disruptive effects of a high power replacement under the closed conditions may be attributable to the opposition of the group members to High attempts to assume the power role indicated by the position, when, in fact, the role may have been already assumed or may be perceived as devolving to one of the more long term members of the group. The greater difficulty attending the replacement of the low power member in open groups may be attributed to the reluctance of low power replacements to accept the low power inherent in the formal position in open groups.

The remaining findings concern largely the behavior of the members occupying the various power positions. Initially, the developing informal power structure was consistent with the formal power structure; High received the most notes; Low received the least. Moreover, High sent the least notes, and Low sent the most notes. Finally, High's private initial estimate tended to be nearest to the group decision on task one. To this point the results generally support those reported by Kelley (1951) concerning communication in experimentally created power hierarchies. Following the membership changes prior to the third task, however, Medium tended to emerge as the most powerful member. Medium sent and received the most notes during task three. In fact, this structural change was already in evidence during the second task. On both task two and task three Medium's private initial estimate tended to be nearest to the group decision.

The emergence of Medium to the dominant position in the informal structure was particularly evident when Low was replaced. Under these conditions, Medium sent the most notes and agreed more than the other members with the group estimate. There was also evidence (Table 7) that Medium may have resented the assignment of a replacement to a higher power position in the formal structure of the group. Thus when High was replaced, Medium agreed least with the group decision.

Medium's tendency to emerge as the most powerful member may have derived in part from the confluence of communication channels through the intermediate power position, the completely open communication network notwithstanding. It has been established (Kelley, 1950) that lower ranking members in a power hierarchical group tend to communicate upward. It would be reasonable to expect, however, that the communications of the low ranking members are most frequently directed toward the member occupying the power position immediately above his own position. This would be particularly indicated in the present experiment where Medium was the "gatekeeper" of communications to High during the final decision-making procedure.

On the other hand, since the highest power member can only communicate downward if he is to communicate at all, it may be anticipated, similarly, that High's communications are most frequently directed toward the member occupying the power position immediately below his own position; that is, in terms of the present study, to the only position that controls the decision suggestions from Low.

Indeed the results support these conjectures. Table 11 presents a $2 \times 2 \times 2$ analysis of variance of the arc sine transformation of the percentage of messages from High or Low sent to Medium under open or closed group conditions during tasks one and two. Since the percentage of High's messages, for example, that are sent to Medium or to Low are interdependent, these results indirectly describe the relative number of messages sent by either High or Low to the other two group members. The results with regard to power were statistically significant ($p < .01$).

Insert Table 11 about here

Low sent a higher percentage of his notes to Medium than did High. Necessarily, these results also indicate that Low sent a smaller percentage of his messages to High than High sent to Low. A more detailed inspection of the data also revealed

that both High and Low sent the majority of their messages to Medium.

A similar analysis with reference to task three is presented in Table 12.

Insert Table 12 about here

The results are consistent with those involving tasks one and two. Again, Low sent a greater percentage of his notes to Medium than did High and both High and Low sent the majority of their notes to Medium. These results, however, pertain largely to the open conditions. Interaction between the power and open-closed variables was statistically significant ($p < .05$). Under the closed conditions, communications from High to Low and from Low to High were balanced. Under the open conditions, however, Low in contrast to High sent a greater percentage of his messages to Medium. This latter finding lends further support to the hypothesis that the open groups tend to adhere to the formal power structure to a greater extent than closed groups.

Yet, it might be argued, that the power ascribed to Medium is an artifact of the peculiar three-man power hierarchy employed in the experiment and that the findings are, therefore, of limited generalizability. If, on the other hand, Medium's role is described as involving information collection, storage, and distribution, the results indicate that the member who assumes this role tends to emerge as the most powerful member in the informal group structure, particularly under conditions of changing group membership. Here one is reminded of the power often accorded the First Sergeant in military units in which the commissioned officers have been transferred more frequently than the non-commissioned officers.

Summary

Growing out of a general framework of changing group membership, a laboratory experiment was conducted to test the following hypotheses: (a) In closed groups as compared with open groups, the informal power structure tends to be more congruent with the formal power structure. (b) The relative difficulty of assimilating a replacement

who is to occupy a high as compared with a low power position is greater in closed groups than in open groups. Both hypotheses were contradicted by the results. The informal and formal power structures were found to be more congruent in open as compared with closed groups. It was proposed that open groups adhere more closely to the formal power structure in order to facilitate anticipated changes in group membership. In this sense the results support Merton's propositions concerning bureaucracies.

In contradiction to the second hypothesis it was found that the high power replacement was associated with more disruptive effects under the closed group conditions; whereas the replacement of a low power replacement was attended by greater difficulty under the open conditions. The replacement of the high power position under open conditions was assumed to be aided by the group's acceptance of the formal group structure. By the same token, however, the formal group structure tended to retard the assimilation process of the low power member who was presumed to be reluctant to accept the assignment to a low power position.

The results also indicated that as time passed, the medium power member in the formal group structure tended to assume the power role in the informal power structure, particularly when the lowest power member was replaced. It was proposed that the intermediate member's power derived, in part, from the confluence of communication channels through his position by virtue of High and Low's reluctance to communicate directly even though the channels of communication were available.

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Table 1

Mean Percentage (Arc Sine Transformation) of Messages Sent During Tasks One and Two
To Each of the Power Positions Under Open or Closed Group Conditions

Group Conditions			
Power	Open	Closed	Total
Position			
High	36.72	34.94	35.83
Medium	37.12	37.03	37.08
Low	31.41	33.53	32.47
Total	35.08	35.17	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	.33	
*B. Task ₁ -Task ₂	1	.02	
C. High-Medium-Low	2	363.67	p < .001
AB	1	.02	
AC	2	61.41	p < .10
BC	2	10.10	
ABC	2	20.38	
D,A	30	.22	
BD,A	30	.22	
CD,A	60	23.88	
BCD,A	60	8.86	

* This variable was not included in the table above in order to conserve space.

Table 2

Mean Percentage of Messages (Arc Sine Transformation) Sent From Each of the Power Positions Under Open or Closed Group Conditions During Tasks One and Two

Power	Group Conditions			
	Position	Open	Closed	Total
High		32.16	33.41	32.78
Medium		35.97	35.91	35.94
Low		36.88	35.78	36.33
	Total	35.00	35.03	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	.05	
*B. Task ₁ -Task ₂	1	.42	p < .10
C. High-Medium-Low	2	242.08	p < .05
AB	1	.05	
AC	2	22.08	
BC	2	24.20	
ABC	2	7.52	
D,A	30	.26	
BD,A	30	.11	
CD,A	60	60.77	
BCD,A	60	13.82	

* This variable was not included in the table above in order to conserve space.

Table 3

Mean Number of Messages Exchanged Within Each Group During
Tasks One and Two and Under Open or Closed Group Conditions

Task	Group Conditions		Total
	Open	Closed	
One	19.88	19.00	19.44
Two	18.38	21.12	19.75
Total	19.12	20.06	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	14.06	
B. Task 1 - Task 2	1	1.56	
AB	1	52.56	p < .05
C,A	30	46.41	
BC,A	30	11.83	

Table 4

Mean Individual Post-Group Estimate Deviation From the Group Decision on
 Tasks One and Two and Under Open or Closed Group Conditions With
 Reference to the Power Positions of the Individual Group Members

Tasks	Group Conditions		
	Open	Closed	Total
One	20.21	20.75	20.48
Two	14.96	16.40	15.68
Total	17.58	18.57	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	47.01	
B. Task 1 - Task 2	1	1106.88	p < .01
*C. High-Medium-Low	2	26.58	
AB	1	9.6	
AC	2	145.38	
BC	2	9.88	
ABC	2	19.47	
D,A	30	263.58	
BD,A	30	84.52	
CD,A	60	151.07	
BCD,A	60	94.44	

* This variable was not included in the table above in order to conserve space.

Table 5

Mean Deviation of Initial Estimates From the Group Decision for Tasks One, Two, and Three
With Reference to the Power Positions of the Group Members

Power Positions	Tasks			Total
	One	Two	Three	
High	29.52	25.88	25.41	26.94
Medium	29.91	25.27	21.45	25.54
Low	36.20	27.02	26.82	30.01
Total	31.87	26.06	24.56	

Table 6

Mean Deviation of the Group Members Initial Individual Estimates From the Group Decision
on Task Three Under Open-Closed and Replacement of High or Low Power Members

Group Conditions			
Replacement	Open	Closed	Total
High	23.50	27.38	25.44
Low	27.52	19.85	23.68
Total	25.51	23.61	

Analysis of Variance

Variables	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	85.25	
B. Replace High or Low	1	73.27	
*C. High-Medium-Low	2	248.58	
AB	1	802.63	p < .10
AC	2	287.04	
BC	2	138.08	
ABC	2	322.34	
D,AB	28	270.49	
CD,AB	46	282.60	

* This variable was not included in the table above in order to conserve space.

Table 7

Mean Individual Post-Group Estimate Deviation From the Group Decision on Task Three and
Under Open or Closed Group Conditions With Reference to the Power Position of the
Individual Group Member

Replacement	Group Conditions		Total
	Open	Closed	
High	14.29	19.25	16.77
Low	17.62	12.08	14.85
Total	15.96	15.67	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	2.04	
*B. High-Medium-Low	2	45.09	
C. Replace High-Low	1	88.17	
AB	2	159.57	
AC	1	661.50	p < .10
BC	2	716.07	p < .05
ABC	2	322.59	
D,HC	28	248.03	
BD,AC	56	222.31	

* This variable was not included in the table above in order to conserve space.

Table 8

Mean Percentage (Arc Sine Transformation) Messages Sent to Each of the Power Positions Under Open or Closed Group Conditions During Task Three

Power	Group Conditions		Total
	Open	Closed	
Position			
High	36.06	37.12	36.59
Medium	37.06	36.88	36.97
Low	32.25	31.19	31.72
Total	35.12	35.06	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	.09	
B. High-Medium-Low	2	274.50	p < .001
*C. Replace High or Low	1	.09	
AB	2	9.13	
AC	1	.01	
BC	2	9.50	
ABC	2	3.29	
D,AC	28	.12	
BD,AC	56	18.43	

* This variable was not included in the table above in order to conserve space.

Table 9

Mean Percentage of Messages (Arc Sine Transformation) Sent From Power
Positions Under Open or Closed Group Conditions During Task Three

Power	Replacement		Total
	High	Low	
Position			
High	31.75	33.00	32.38
Medium	36.56	38.75	37.66
Low	36.94	33.38	35.16
Total	35.04	35.08	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
*A. Open-Closed	1	.04	
B. High-Medium-Low	2	223.34	p < .01
C. Replace High or Low	1	.04	
AB	2	11.45	
AC	1	.04	
BC	2	76.14	p < .10
ABC	2	7.95	
D,AC	28	.20	
BD,AC	56	25.62	

* This variable was not included in the table above in order to conserve space.

Table 10

Mean Number of Messages Exchanged Within Each Group During Task Three
 Under the Open-Closed and Replacement Conditions

Group Conditions				Total
		Open	Closed	
Replacement				
High		21.50	27.00	24.25
Low		24.00	22.75	23.38
Total		22.75	24.88	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	36.13	
B. Replace High or Low	1	6.13	
AB	1	91.13	p about .05
C,AB	28	22.27	

Table 11

Mean Percentage of Messages (Arc Sine Transformation) From Each of the High and Low Power Positions Sent to the Medium Power Position Under Open or Closed Group Conditions During Tasks One and Two

Power	Group Conditions			
	Positions	Open	Closed	Total
High		47.00	44.91	45.95
Low		52.44	51.75	52.09
Total		49.72	48.33	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	61.88	
*B. Task 1 - Task 2	1	20.32	
C. High-Low Power	1	1206.63	p < .01
AB	1	82.88	
AC	1	15.82	
BC	1	73.51	
ABC	1	20.32	
D,A	30	145.83	
BD,A	30	32.85	
CD,A	30	127.18	
BCD,A	30	35.86	

* This variable was not included in the table above in order to conserve space.

Table 12

Mean Percentage of Messages (Arc Sine Transformation) From Each of the High and Low Power Positions Sent to the Medium Power Position Under Open or Closed Group Conditions

During Task Three

Power Position	Group Conditions		Total
	Open	Closed	
High	47.44	50.69	49.06
Low	51.69	50.38	51.03
Total	49.56	50.53	

Analysis of Variance

Variable	Degrees of Freedom	Variance	Level of Significance
A. Open-Closed	1	15.02	
*B. Replace High or Low	1	13.14	
C. High-Low Power	1	62.01	p < .10
AB	1	87.89	
AC	1	83.27	p < .05
BC	1	15.02	
ABC	1	1.89	
D,AB	28	94.98	
CD,AB	28	17.62	

* This variable was not included in the table above in order to conserve space.

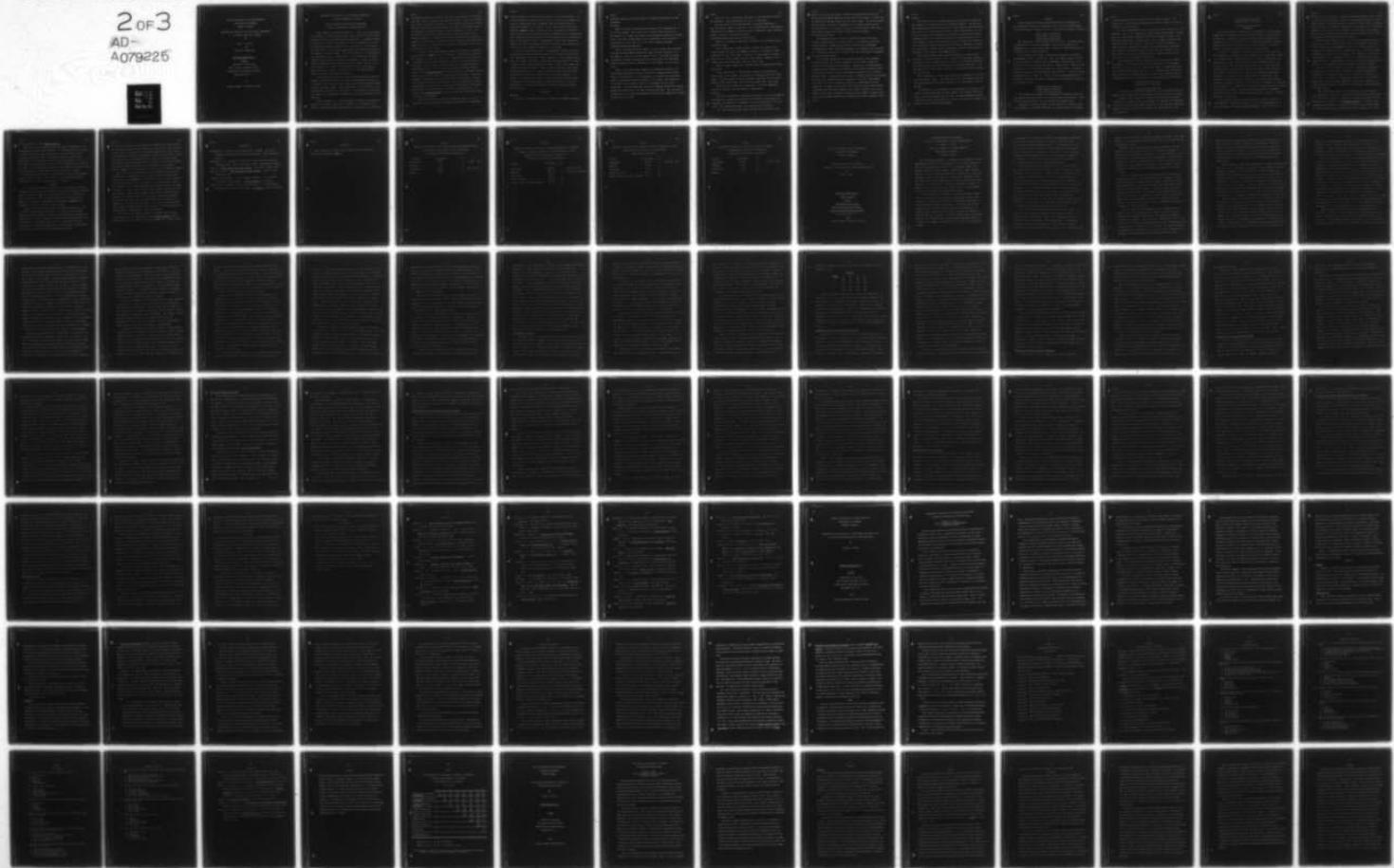
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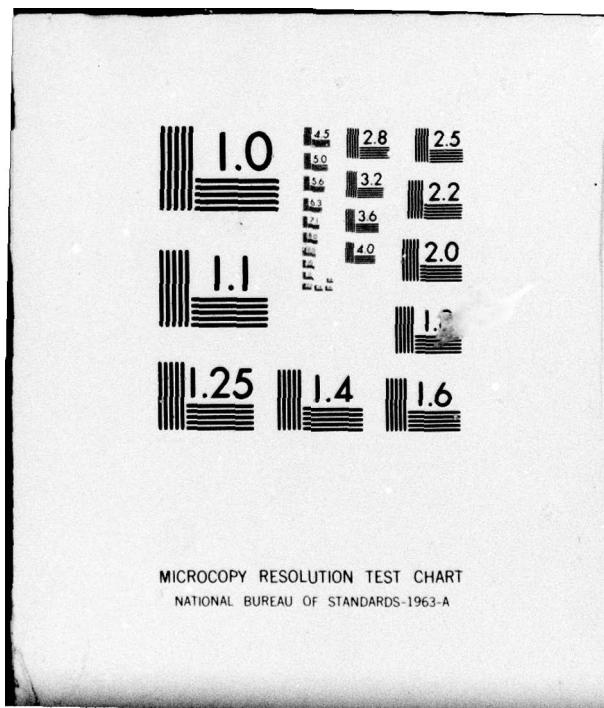
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Mobility and Influence in Inter-Group Competitive
and Goal Competitive Groups

by

Robert C. Ziller

and

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Technical Report No. 3

to the

Department of the Army
The Adjutant General's Office
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Washington 25, D. C.

for

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Mobility and Influence in Inter-Group Competitive
and Goal Competitive Groups¹

Robert C. Ziller and Richard D. Behringer

Center for Research on Social Behavior

Lewin (1951) has defined the power of b over a as the maximum force that b can put on a toward some region relative to the maximum resistance that a can mobilize against b's force. Cartwright (1953) has used this concept to describe some of the consequences of power in relatively permanent groups, or as used here, in closed groups. He notes that in closed groups, b's power may be exercised either in the present or in the future. Yet in open groups or in groups where the membership is in a constant state of flux either b or a may be removed from the group or may leave voluntarily. Either of these latter contingencies has implications for the power aspects of the relationship. For example the possibility of a or b leaving the group necessarily reduces the length of time over which either person can impose sanctions on the other.

In the study reported here, it was proposed generally that the degree of power which will be accorded a knowledgeable newcomer is a function of his mobility across groups and the relationship between the host and donor groups. Three variations in the mobility of the knowledgeable newcomer were considered: (a) departure is precluded; (b) departure is imminent; (c) departure is at the discretion of the newcomer.

Under conditions "a", the knowledgeable newcomer is required to remain in the group. Given this condition, it is proposed that a threat of impending status incongruency is generated if the talented

new member attempts to influence the longer term members of the group from the coign of vantage of his superior ability. Here it is assumed that tenure and power or influence in the group are positively related (Ziller, Behringer and Jansen; 1961); the longer term members expect to occupy more powerful positions than the newcomer. If then, the newcomer is potentially a high influence member by virtue of his superior knowledge, a threat to the status structure of the group is suggested, and it may be anticipated that the longer term members will tend to resist the forces that the newcomer can mobilize to move the group toward a given region.

If, however, the knowledgeable newcomer's departure is imminent, his influence attempts may be countenanced. Under these conditions, the newcomer need not be perceived as a regular member but rather as a consultant; a role which eschews the threat to the group's status structure. Indeed, short tenure and power are consistent with the consultant's role. In effect, these conditions describe Simmel's (Wolfe, 1953) stranger passant to whom one tends to attribute objectivity by virtue of his lack of interpersonal associations. Since the stranger's interpersonal associations within the group are minimal, it is presumed that his opinion will be altered minimally by various interpersonal considerations. Moreover, the newcomer's motivations with respect to status striving need not be threatening since, in effect, the stranger passant in no way enters into the stable status structure of the group.

The third variation in mobility (departure choice is at the discretion of the newcomer), introduces the potential of bargaining

behavior which is not in the choice domain of the other members. If the knowledgeable newcomer were to choose to remain in the group, it could be assumed with some confidence that the newcomer holds a positive evaluation of the group. On the other hand, if the knowledgeable newcomer were to choose to leave the group to rejoin his former group or another group, invidious comparison may be implied and may be particularly threatening if the two groups were in competition. Thus, an interaction effect is hypothesized between the newcomer's mobility and the relationship between the host and donor groups with reference to the newcomer's influence in the group.

It is also hypothesized that a knowledgeable newcomer will have more influence under inter-group competitive conditions than under goal competitive conditions. Under conditions of inter-group competition, the members are forced to entertain the possibility of a range of talents which extends beyond the limits of those found within the confines of their own group. Thus a talented newcomer from another rival group may serve as a concrete bit of evidence that their own talents may be limited in comparison with some other groups. If, however, the donor group is not in competition with the host group, chauvinism and intra-group member rivalry may operate to deny the possibility of a range of talents beyond those represented within the host group.

Procedure

Subjects

A total of 108 students from the freshman and sophomore physical

education classes at the University of Delaware participated in the experiment.

Procedure

Three Ss drawn at random from the subject pool comprised one of the 36 host groups. The Ss were led to believe that they were to participate in a study concerning decision-making by groups of varying sizes. The three group members could communicate only by means of notes written on one side of 1" x 8" cards exchanged through a standard notepassing apparatus.

Before introducing the new member, the host groups were presented with two decision-making tasks which demanded group estimates as to the number of dots on a briefly exposed slide. Preceding the group discussion and again following the group discussion, the individual members submitted private estimates as to the number of dots on the slide.

Prior to the third task, another dot estimation exercise, the inter-group competition and goal competition inductions were introduced. At this point, too, the groups were informed that consistent with the previously announced purpose of the study a new member was to be added to the group in order to investigate the effects of group size. The new member was described as having worked with another group in another room on the same two previous tasks. The selection of the person to leave the other group was announced as having been decided by the toss of a coin.

Here, too, one of the three variations in the newcomer's mobility was presented. The newcomer was, in fact, a confederate.

The procedure in the third task was essentially identical to that followed on tasks one and two. After submitting the final private estimates of the number of dots the members completed a short questionnaire. A period of catharsis followed.

Inter-Group Competition and Goal Competition

Under the intergroup competitive condition the following instructions were read:

On the third task, if this group's estimate is closer to the correct number than the other group's estimate, each member of this group will receive fifty cents. Moreover, if this group's estimate is closer to the correct number than the other group's estimate on the fourth task, each member will again win fifty cents.

Under the goal competitive conditions the following instructions were read:

On the third task, if this group's estimate is within \pm 200 dots of the correct number, each person in this group will win fifty cents. If this group's estimate is within \pm 200 dots of the correct number on the fourth task, each person will again win fifty cents.

Under the goal competitive conditions it was also emphasized that in no way were the two groups in competition.

Mobility

The three conditions of mobility had reference to the new member's stability in the group and included (a) departure is precluded; (b) departure is imminent; (c) departure is at the discretion of the newcomer. The actual directions to the group read as follows:

- (a) The new person will remain in this room and work in this

group for the last two tasks. (b) The new person will leave this group after the third task and return to the other group. He will then be replaced by another person from the other group. (c) The new person will be given the choice of staying in or leaving this group after the third task. If he chooses to leave, he will return to the other group and be replaced by another person from that group.

The Confederate's Role

The newcomer's were, in fact, confederates who had received detailed instructions as to their roles. On the bases of previous studies (Ziller, Behringer, and Jansen, 1961; Ziller, Behringer and Goodchild, 1960), initiating messages and responses were developed. These were used almost exclusively by the confederates throughout the note-passing session.

The initial message sent to all naive members by the newcomer laconically gave the correct "estimate" and a correct arithmetic process for arriving at that estimate. Thereafter, the knowledgeable newcomer merely responded to inquiries with prescribed messages which reflected the attitude that he was highly confident of his estimate but was ready to compromise for the sake of group efficiency and harmony. Moreover, the confederates were enjoined to avoid the "leadership" role, that is, not to assume the function of submitting the final estimate. It should be noted that the task was of such extraordinary complexity that the naive members could neither estimate the correct number of dots with confidence nor logically determine or happen upon the correct approach during the extremely limited time exposure of the slide.

Measures

The influence of the newcomer under the experimental conditions was assumed to be reflected in the following measures: (a) the arc-sine transformation of the percentage of notes within each group which were sent to the confederate; (b) the arc-sine transformation of the ratio of how much the individual group members changed their initial estimates toward the confederate's position to how much they could have changed; (c) the member's private agreement with the confederate after the group decision expressed as the absolute difference between the confederates estimate and the individual member's final private estimate; (d) accuracy of the group estimate.

Three questionnaire items were also assumed to indicate the influence of the confederate: (a) I changed my individual estimate of the number of dots a great deal as a result of the group discussion? (b) This persons ideas with reference to the group task were of very high quality? (c) This person exerted a very great influence throughout the meeting?

The alternatives to these three items were arranged on an eleven-point descriptive scale. In items "b" and "c" the members rated all the group members, but only the ratings of the newcomer were used in analyses.

In addition to these measures concerning power or influence, the members' disagreement with the group answer (the absolute difference between the group estimate and the final individual member's private estimates) and the time required to complete the task were explored in relation to the independent variables.

Results

A 2x3 analysis of variance design involving the mobility and the competition variables in relation to the arc-sine transformation of the percentage of notes sent to the confederate is present in Table 1.

Insert Table 1 about here

The results were statistically significant ($p < .01$) with regard to competition. Under the intergroup competition conditions in comparison with the goal competition conditions a higher percentage of notes were sent to the confederate.

A 2x3 analysis of variance design which abstracts the subject-within-group variance (Henderson, 1959) was applied with reference to the independent variables and the arc-sine transformation of the ratio of how much the individual members changed their estimate in the direction of the confederate and how much was possible to change. Again the results were statistically significant ($p < .05$) with regard to competition (see Table 2). Under the inter-group competition as opposed to the goal competition conditions, the members were persuaded to a greater extent.

Insert Table 2 about here

The members also tended to be persuaded to a greater degree by the newcomer who was scheduled to leave the group momentarily. These latter results, however, are not statistically significant.

Analyses of variance similar to those presented in Table 1 and 2 were applied to the data involving the member's private acceptance

of the group answer and the accuracy of the group estimate. The results were not statistically significant; and the tables are omitted in order to conserve space.

The three questionnaire items also pertain to the influence of the newcomer. None of the results were statistically significant. Members under the inter-group competition conditions, however, reported that they had changed their estimates more, and gave higher ratings to the newcomers' ideas and influence. Moreover, in terms of mobility, higher influence ratings were awarded confederates whose departures were imminent. The members also reported they were influenced more when interacting with the departing member. Again, however, these results were not statistically significant.

A 2x3 analysis of variance similar to that presented in Table 2 was applied to the members' private acceptance of the final group decision (see Table 3). The results with regard to competition were again statistically significant ($p < .05$). Members under the inter-group competition conditions privately accepted the group decision to a greater extent than members under the goal-competition conditions.

Insert Table 3 about here

It was also noted that the members were least satisfied with the group decision when the confederate was destined to leave the group.

Finally, a 2x3 analysis of variance involving the independent variables in relation to the time required to complete the estimation task revealed that groups under conditions of inter-group competition tended to require less time to complete the group task ($p < .05$).
(See Table 4.)

Insert Table 4 about here

Discussion

The results indicate that under the conditions of inter-group competition in comparison with the goal-competitive conditions more messages were remitted to the newcomer; the members changed their estimates more in the direction of the newcomers position; the individual members privately accepted the group decision to a greater degree; the group completed the task in a shorter time.

It should be emphasized that the experiment was not concerned with competition as opposed to non competition or cooperation. Both of the experimental conditions involved a kind of competition: the group either competed against another group or against a set goal. To some extent, then, the motivational aspects of competition were controlled; but it was assumed that the perception of the newcomer under these conditions varied. Under the inter-group competition conditions in contrast to the goal-competition condition, it was proposed that when the former encounter a new member with a unique method of reaching a solution to a task they are compelled to entertain the possibility of a range of talents which extends beyond those found within their own group. They are confronted with the disturbing possibility that the new member may represent the talents of a group superior to their own.

One possible reaction to this threat is to deny or avoid its consideration. This latter course of action may be presumed to be less hazardous in the goal-competitive groups. In the event of

failure to achieve the goal, invidious comparison with the other groups is precluded by directions. Under the inter-group competitive conditions, however, the members will be reminded of their relative ability when the award is announced. Therefore, the possibility of a superior approach to the task is an inescapable consideration. Accordingly, more notes are addressed to the knowledgeable newcomer; and the naive members are more influenced by the newcomer.

The preceding arguments lead to the open-closed group concept invoked in earlier research efforts (Ziller, Behringer, and Jansen, 1961). Previously the open group was defined as an interacting set of persons in a continuous state of membership flux. On the other hand, membership is stable in closed groups. The findings of the present study suggest that a group may be closed in another sense; they are simply not open to suggestions from persons outside the group because they are less concerned about being compared with other groups.

Yet, from another point of view, goal competition may motivate the group to excell previous performances but may not permit the utilization of foreign resources as this could be interpreted, in a sense as a confession of fundamental inferiority. On the other hand, under the inter-group competitive conditions, admissions of former inferiority may be assuaged by successfully competing against the other group.

The results with regard to the mobility of the newcomer were only suggestive; none of the results were statistically significant. Yet, it would be remiss to overlook the tendency for members to be persuaded more readily by the stranger passant, the newcomer whose departure was imminent. Similar results were observed with regard to the questionnaire; the members gave higher ratings to the ideas

and the influence of the stranger passant.

These results are consistent with the initial hypothesis. The knowledgeable newcomer whose departure is anticipated may be perceived as more objective and less threatening. He in no way anticipates becoming a permanent member of the group; therefore, his patent superiority is not perceived as status striving behavior. In effect, this type of newcomer plays the role of the consultant who is expected to provide the group with the benefits of his experience without demanding in return any permanent high status position in the group.

The highly tenuous nature of these latter results hardly warrant further comment. Still, these results at least encourage further exploration along these suggested lines of inquiry.

Summary

In a laboratory experiment involving a 2x3 factorial design the influence of a newcomer in the group was studied in relation to inter-group competition as opposed to goal-competition and in relation to three variations in the horizontal mobility of the newly arrived member; (a) departure is precluded (b) departure is imminent (c) departure is at the discretion of the newcomer.

After the three host group members had worked together on two preliminary tests through the medium of a standard note passing apparatus, the newcomer was introduced ostensibly for the purpose of studying the effects of group size on group decision making processes and products. The newcomer was, in fact, a confederate who was instructed to encourage the group to accept the correct answer which he had arrived at by a relatively ingenious procedure.

The newcomer's influence was assumed to be reflected in such measures as (a) the percentage of notes within each group sent to the newcomer; (b) the ratio of how much the individual group members changed their initial estimate toward the newcomer's position to how much they could have changed; (c) the member's private agreement with the newcomer following the group discussion; (d) the accuracy of the group estimate. Three questionnaire items were also used which were designed to provide measures of the newcomer's influence on the individual members.

The results indicated that under the conditions of inter-group competition in comparison with the goal-competition conditions (a) more messages were remitted to the newcomer; (b) the members changed their estimates more in the direction of the estimate held forth by the newcomer; (c) the individual members privately accepted the group decision to a great extent; (d) the group required less time to reach the decision. These results supported the initial framework which proposed that members under the inter-group competition conditions in contrast with those under the goal-competition conditions are compelled to entertain the possibility of a range of talents beyond those extant in their own group when a member of another group with a unique method of approaching a task is introduced.

The results also suggested (albeit tenuously) that the host group members are more influenced by the stranger passant than by the newcomer who may remain or has been assigned as a regular member.

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Footnotes

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Table 1

Analysis of Variance of the Percentage (Arc Sine Transformation)
of Notes Sent to the Newcomer Under Conditions
of Mobility and Inter-Group Competition

Variance	Mean Square	df	F
Competition	69.44	1	7.77 (p .01)
Mobility	.25	2	
Interaction	13.53	2	1.51 (n.s.)
Between	8.93	30	

Table 2

Analysis of Variance of the Arc Sine Transformation of the Ratio
of Change to Possible Change of Individual Estimate in the
Direction of the Newcomer As a Function of
Mobility and Inter-Group Competition

Variance	Mean Square	d.f.	
Competition	4800.00	1	5.70 ($p < .05$)
Mobility	1751.51	2	2.08 (3.13 required)
Interaction	270.08	2	
Between (Groups)	1139.10	30	
Between (Subjects Within Groups)	841.42	72	

Table 3

Analysis of Variance of the Member's Private Acceptance of the
Group Decision in Relation to Mobility and
Inter-Group Competition

Variable	Mean Square	d.f.	F
Competition	996.15	1	5.45 ($p < .05$)
Mobility	84.26	2	
Interaction	45.59	2	
Between (Groups)	239.23	30	
Between (Subjects Within Groups)	182.72	72	

Table 4

Analysis of Variance of the Time Required to Complete
the Estimation Task Under Conditions of
Mobility and Inter-Group Competition

Variable	Mean Square	d.f.	F
Competition	68.53	1	4.2 (p < .05)
Mobility	7.99	2	
Interaction	3.00	2	
Between	16.33	30	

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Individuation and Socialization
A Theory of Assimilation in Large Organizations^{1,2}
by
Robert C. Ziller

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for
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Individuation and Socialization
A Theory of Assimilation in Large Organizations
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The underlying principle or assumption in a variety of social psychological theories of personality is the conflict between the need for dependence and the need for independence (Rank, 1936; Murray, 1938; Levy, 1955; Ausuble, 1952; Harvey, Hunt, Schroder, 1961³). On the one hand the individual is expected to evolve his own goals, make his own plans and decisions in relation to these goals, and accept the responsibility of these decisions and their outcomes. On the other hand, the same individual is expected to surrender some of this same self assertiveness or individuality in order to establish relationships with others.

The establishment of a state of equilibrium between dependence and independence is particularly precarious during adolescence; but is almost by definition a fundamental requirement of the socialization process in general. Inherently, the socialization process entails conflict between the satisfaction of individual and group needs. Even when the group is composed of only two members, it is rare to find conditions which continually maximize the satisfactions of both members simultaneously; and, of course, the problem is compounded as the size of the group increases.

In this paper, the origins of the need for independence-dependence in a social setting are examined in terms of the more basic need for ego identity (Erickson, 1959). The consequences of the need for ego identity in terms of social behavior are explored, related theories are re-examined on the basis of this developing framework, and the implications of the framework are projected to a number of social problems but particularly the problem of the socialization process in large organizations.

Most personality theorists propose in one form or another that most normal children go through a period of dependent, identification with their parents. Ausuble, (1952), for example refers to a period of "satellization" in which the child having discovered through series of disappointing experiences that he can not successfully manipulate his environment to such an extent as to satisfy all of his omnipotent fancies, will turn to his parents who appear omnipotent to him. Harvey, Hunt, and Schroder, (1961) also postulate that the first stage in child development is "unilateral dependence". In this stage the child is submissive to external control almost to the point where there exists a lack of differentiation between the parents and the self.

If the child's development were arrested at this stage, he would be almost completely dependent upon external controls. Internal controls begin as the child's world expands beyond the immediate family environment. This second stage of development is usually described as independence (Levy, 1955) or "negative independence" (Harvey, Hunt, Schroder, 1961). Here is witnessed the

growth of the "self will". Parental control is resisted. The child prefers to try by himself and fail rather than to rely entirely upon the parent's guidance.

Exclusive reliance upon external cues for behavior controls proves unreliable as the life space of the child is enlarged to include other individuals or to include the alone condition. With the enlargement of the social field the absolutistic rules established with a single individual prove too rigid to operate effectively under a wide variety of situations. For example, behavior acceptable to parents is not necessarily acceptable to teachers or peers.

Reduced exclusive interaction with parents also demands and necessarily creates a more differentiated self concept. Information concerning the consequences of personal behavior now is frequently transmitted solely and directly to the individual rather than to the parent-child complex. Emerging from the dependent developmental period the child begins to distinguish himself from other group members, is recognized by other members, and enables other members to distinguish or locate him among the members. Thus, in this period, the child begins to establish an identity as a separate, unique individual.

Yet the conflict between dependence and independence continues. There are advantages with regard to each of the polar behavior under varying conditions of difficulty and resulting successes and failures. It is sometimes comforting to rely on the group and to lose ones identity within the group. Othertimes it is frustrating to be compelled to act in unison or interdependently. The hypothesized resolution of the conflict is the integration of autonomy and mutuality, (Harvey, Hunt, and Schroder: 1961).

Both autonomy and mutuality are important and are integrated in such a way as to minimize interference and conflict. The individual recognizes the roles which others play in the group but is not overwhelmed or alarmed. At the same time, an autonomous evaluation system is preserved against which individual behavior is judged with reference to group and individual progress and achievement.

Erikson (1959) describes this resolution of independence-dependence forces as a comfortable delineation of ego identity and group identity, as opposed to "ego diffusion." Erikson describes ego identity as the "awareness of the act that there is a selfsameness and continuity to the ego's synthesizing methods and that these methods are effective in safeguarding the sameness and continuity of one's meaning for others." Under conditions of ego diffusion, the individual has difficulty distinguishing his uniqueness; contrasts and similarities between the self and others fail to be perceived and results in an amorphous, diaphonous and obscured self portrayal.

The development of the self concept as it has been deduced to this point may be perceived as the essence of the socialization process. The various stages of child development which have been sketched here may be interpreted as the child's effort to become assimilated into the family and subsequently into the larger community. In some sense then, the threat of ego diffusion may be aroused whenever the individual is introduced as a new member into a group. The process of self identification and identification by the group members is reactivated with reference to the newcomer

because of the changing social field. Since identity is established, in part, in terms of the social field as a frame of reference, a changed social field necessitates a re-examination of identity. By way of illustration the socialization and resocialization process may be traced through a rudimentary dyadic relationship.

Imagine that persons "A" and "B" are presented with the task of lifting a number of objects of different but unknown weights on to a platform. Under these conditions, each individual has little opportunity to obtain information as to his individual performance, but particularly if he does not attempt to vary his behavior or the amount of exertion and if he had not performed a similar task previously. The object may be successfully lifted, but each individual is not aware of or can not identify his own relative contribution to the success. Under these conditions, the members of the group are completely interdependent and are unable to separate out their individual contributions. If now, however, the membership is changed repeatedly and the same tasks are presented to the new groups, each member of the various groups accumulates information about his own contribution relative to that of the other group members and in the process learns to identify himself as an individual worker.

Thus identity can only evolve from a group situation if at least two conditions are both satisfied: (a) group membership must change and (b) information concerning the group's performance must be presented to the group members. Unless both of these conditions are met in a group situation, the individual is subject to the threat

of ego diffusion wherein the identity of the individual as an individual or as an entity becomes fused with that of group identity. Yet, not all individuals will respond to ego diffusion as if it were a threat. The response of the individual member to conditions of ego diffusion may be determined by the characteristics of the individual and the characteristics of the group. In some organizations, self realization is facilitated by the assignment of easily distinguishable positions and by the role expectations associated with the corresponding position. In other organizations, however, a large number of positions and the accompanying roles are relatively undifferentiated as, for example, the members of an infantry platoon, members of an assembly line production team who are frequently rotated in their individual roles, classroom students under the lecture technique of teaching, and even teachers in a large urban school system. Obviously, the search for self identity and the concomitant anxiety are presumed to be particularly poignant in bureaucratic organizations where positions and roles are standardized for purposes of control and in order to insure the fidelity of communications.

Upon entering a bureaucratic organization, the new member encounters difficulty in mapping the social field in relation to the self. Contrasts and similarities among the social elements depends upon data gathering and the subsequent differentiation processes. During this initial period, the new member is distinguished largely by the fact that he is new. If now, the social environment is difficult to fractionate into individual and contrasting components

(as at certain levels in a bureaucratic organization), the differentiation process may be decelerated. In addition to the difficulty of differentiation of self from others, others also have difficulty identifying him. Furthermore, it is proposed that persons outside such organizations tend to respond to the group as a category rather than as a collection of differentiable persons ("He is a soldier"). All these factors are assumed to contribute to the new member's anxiety and to present a threat to personal identity and the stability of the self concept.

Of course, adaptation to de-differentiation in large organizations may also be expected to be a function of the personality characteristics of the member. Quite clearly, persons with more well defined and more stable self concepts may be expected to find a bureaucratic organization less threatening. For example, the new member's scores on Barron's Ego Strength Scale (1953) are hypothesized to be related to adjustment in large organizations, particularly during the initial phases of assimilation.

A negative adaptation to de-differentiation in large organizations derives from Erikson's concept of negative identity (1959). Erikson proposed that a loss of self identity may result in the adoption of a role which had been pointed out in one of the developmental stages as clearly the most undesirable and dangerous, yet at the same time clearly the most real. From this it may be hypothesized that the search for identity in the Armed forces, for example, may lead to deviant behavior designed to distinguish the

the individual albeit negatively, from the oppressively similar masses. The search for identity through conformity to the rules of the organization is perceived as unattainable. Subtle distinctions of superiority at the positive end of the scale are scarcely satisfying to the member who has difficulty differentiating himself generally from other persons. The minority of nonconformists offers the better alternative; the minority by definition is more distinct and offers greater opportunity for differentiation.

Support for the hypothesis relating de-differentiation to delinquency may be found in the extensive studies of Glueck and Glueck (1950) which attempt to relate child training practices to the incidence of delinquency. In comparison to mother's of non delinquents, mothers of delinquents were found to be less warm (45% to 80%); more indifferent (21% to 3%) and much more likely to be likely to be lax (57% to 12%). These results may be interpreted as suggesting that delinquency is flight from ego-diffusion or lack of identity resulting from parental relationships which fail to regard the individual child as singularly important or has someone whose presence or existence makes a significant difference in some emotional sense to the parents, and whose parents fail to help the child develop a well defined boundary system which can be incorporated in the self structure. Thus, in search of an identity, the child turns to deviant behavior which is singular and well delineated by definition.

In addition to personality and group correlates to adjustment in large organizations, a cultural factor must be considered.

The need to clearly differentiate the self from others in the group may have cultural derivatives. In the United States, as contrasted to some other cultures, the individual, as an individual, is exalted; there is a deep concern for the "dignity of man". Families are usually relatively small, thereby permitting parents more time to focus their attention on the individual child and to respond to each child as an entity. Furthermore, the abundance of clothing in the United States permits differential dress; and the size of the average dwelling usually allows for individual or paired room assignments. When the child enters school, individual achievement and competition are stressed. Still later self selection of a career from a wide range of alternatives is freely permitted. These are but a few selected factors and experiences which may be said to create an emphasis on the individual as an individual. On this basis, it may be concluded with conviction that members of the American culture are individualized and expect to be individualized.

Although it appears to be functionally necessary to establish an identity and to maintain it under changing environmental conditions, occasions may arise where de-individuation is desirable (Festinger, Pepitone, & Newcomb; 1953). Here, the individual may behave as if he were "submerged in the group". The group, nor the individual, singles anyone out for attention. According to Festinger et al (1953) group members may be more satisfied in groups which provide opportunities for de-individuation since it affords the individual an

opportunity to satisfy certain desirable needs which would be otherwise impossible under the inner restraints which individuation imposes on the members. Perhaps a more parsimonious explanation of the aforementioned proposal may be stated in terms of personalization or individuation as it has been outlined herein. The members are permitted to express themselves (as they perceive themselves) more freely under conditions where there are a minimum of group imposed restraints on the expression of individuality.

Voluntary de-individuation may also be the bases for joining mass movements (Hoffer, 1951). Hoffer suggests that persons who feel compelled to join a cause embodied in a mass movement often feel that their lives have been "spoiled" and reject individuation because it reminds them of their own personal failures.

Thus again, as in the dependence-independence dichotomy, an individuation-deindividuation dichotomy is postulated. Different persons under various presses may seek conditions which permit individuated and deindividuated behavior. A cyclical theory of behavior is indicated. Human beings divide their activities between group centered and individual centered behavior. The serial order and the relative emphasis of the dichotomy, or perhaps more accurately, the duality is hypothesized to be related to the characteristics of the person, the characteristics of the culture, and the previous order and emphasis of behavior.

Arousal potential (Berlyne, 1960) is presumed to rise following prolonger experience under either conditions conducive to in-

dividuation or deindividuation. But again, this arousal state may be generated by fugue behavior under either of these conditions.

Whether constantly responding to the self or to the same group, resistance is generated, the response strength degenerates and self realization degenerates with it. A less well defined self concept is the result. Thus, alternation between individuating and deindividuating conditions provides contrasting experiences which again are necessary in the development and maintainence of the self concept.

For example, Hoffer's theory of mass movements may be extended in these terms to predict that although persons join mass movements to avoid confrontation with their own personal failures, the success of the movement, the person's satisfactions from participation, or even prolonged exposure to the movement conditions will be followed by an opposing movement toward individuating behavior. The mass movement merely provides an opportunity to redefine the self following personal failure; withdrawal into a group frees the individual from oscillating reactions to an unacceptable ego identity. The mass movement is a pause, a respite from an "arousal jag" (Berlyne, 1960) and permits a behavior plateau of self reorganization.

Individuation Defined

Emanating from the foregoing discussion, individuation is defined as a person's subjective mapping of the social world in which self is differentiated to a greater or lesser degree from the other social objects in the field. Although individuation is subjective in nature, objective conditions are presumed to influence the persons sense of individuation. Thus, it is proposed that a person's feelings with

respect to individuation vary inversely with the number of bits of information necessary to locate him or himself unequivocally within a group of persons; that is, the greater the number of bits of information required to locate the person, the greater the degree of de-individuation.

For example, if it is known that one male and five females are in an adjoining room, the male is said to be more individuated than the female; only one bit of information, "male", is required to locate the person without error. Of course, knowledge of each of their names would render them all equally identifiable. However, identification in depth is assumed to reflect further individuation. If, then, the sex and names of these same six persons are known to a discriminator, the individual about whom further information is known is said to be the most individuated or personalized.

By comparing members of a group and rating differences or shades or contrast, the perceiver is said to be individuating at the person-to-person level. A similar process is assumed to be operative at the group-to-group level. In a group where all the members are similar in a number of respects, a degree of differentiation may be achieved if the member identifies with the group and contrasts the parent group with other groups. The principle may be extended to other levels of organization as well but probably only with an increasing loss of cogency. Again, heterogeneity of the stimulus field is assumed to facilitate self identity.

Individuation has been described as a process of categorization and contrast in a qualitative sense. Individuation has also

been described as a function of the number or percent of persons included in a given category in comparison with other categories. It is now proposed that the number of categories in the complex is also a consideration in the individuation process. For example, within the organizational structure of a University there are commonly four academic ranks: instructor, assistant professor, associate professor, and full professor. Within functional considerations, there may be some virtue in examining the number of ranks which optimizes differentiation and minimizes administrative costs.

For example, given four categories and one hundred persons, minimum differentiation among the one hundred persons may be achieved by assignment of the entire population to one category. Maximum differentiation among the one hundred persons may be achieved mathematically by the assignment of an equal number of persons to each of the four categories; that is, maximum uncertainty as to which of the four categories an individual is assigned is achieved by means of a rectangular distribution of persons to each of the four categories. Or in yet another sense, maximum number of bits of information are required to locate any individual in one of the four categories if the population is equally distributed among the four categories.

However, if these categories form a hierarchy and if those persons categorized tend to compare themselves with members of other groups in similar hierarchical categories, a complex individuation process is predicted, particularly under conditions of vertical and horizontal mobility. Thus, given groups A, B, C, or D, each with a four level hierarchical category system. The distribution of

personnel in terms of percent of the total group assigned to each category may be:

<u>Group</u>	<u>Category</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
A	25%	25%	25%	25%
B	10%	20%	30%	40%
C	40%	30%	20%	10%
D	10%	40%	40%	10%

A preference among these groups, varying in conditions of individuation, may be determined by anxiety concerning prominence at the low end of the hierarchical categorical system or a desire for prominence at the high end of the system. (Misery loves company; success desires singularity). System "B" individualizes the successful; System "C" individualizes the failures; while system "D" emphasizes distinctions at both the upper and lower ends of the scale. Preferences for one or the other of these systems may be attributed, in part, to cultural differences and, of course, to personality differences.

Variables Associated with De-Individuation

Necessarily, each member of a group is depersonalized or de-individuated to some extent; that is, each member is required to surrender a modicum of his idiosyncratic characteristics in order to facilitate functional fusion with the group. It is assumed that groups differ with regard to the de-individuation demands on their members. In general, high de-individuation groups are bureaucratic

in structure (Merton, et al, 1952). Among these are included federal government agencies, branches of the United States Armed Forces, large business organizations, religious orders, prisons, and perhaps some nations of the world. All these organizations may be characterized by one or more of the following list of variables which are presumed to induce depersonalization: homogeneity of composition and external appearance, use of categorical appellative rather than individual names (i.e., the use of "brother" in a monastery) high rate of personnel turnover (communicating that the position rather than the person is primary), random assignment as opposed to assignment on the basis of test scores or interview ratings, interchangeable positions, minimizing personal relationships outside the organization, large groups (Barker, 1960), minimizing privacy, denial of property ownership, rigid adherence to formal rules, similarity among subgroups, limited choice of alternatives in decision-making situations, an impoverished environment or lack of novel stimuli, group as opposed to individual evaluations, lack of personal records, dominant leadership, pressures toward uniformity, group as opposed to individual products, similarity of equipment and tools, or the joint operation of one unit of equipment (such as a 155mm. Howitzer), homogeneous membership grouping, and paucity of information sharing. Each of these characteristics of the group is presumed to demand an increase in the number of bits of information required to locate a given individual within the organization.

It should be observed that de-individuation in large organizations is designed to control homogeneous behavior of the group members

as well as heterogenous behavior. For example, if there are only three members in the group, there need be little anxiety concerning any unrestricted relatively harmless homogenous action such as, let us say, chewing gum. But let the size of the group be increased to 1000 members and suppose that in the latter case, the 1000 members decide to dispose of their gum simultaneously. It is for protection against such unanticipated eventualities where idiosyncratic behavior of each group member is magnified by the size of the group when each of the group members somehow or other decides to act similarly simultaneously that large groups must restrict the behavior of individuals. Thus, sometimes it is not heterogenous member action that is threatening to the group as much as it is homeogeous action by the group members magnified far beyond any proportions imagined.

The preceding theoretical framework is, of course, only a partial or sub-theory. The theory does not purport to encompass the totality of human behavior. Nevertheless, a wide varity of other sub-theories and research findings may be subsumed under this single theoretical framework without succumbing to acute theoretical barrel-vision. Examples of these included in the following discussion are: Festinger's theory of social comparison (1954). Schachter's psychology of affiliation, (1960). Fiedler's studies of assumed similarity (1960), the social behavior of twins, individuation and leadership, and de-personalization in industry.

Festinger's Theory of Social Comparison

In his theory of social comparison process, Festinger's

first hypothesis (p.117) states: "There exists, in the human organism, a drive to evaluate his opinions and his abilities". The third hypothesis states: "the tendency to compare oneself with some other specific person decreases as the difference between his opinion or ability and one's own increases" (p.120)..

The first hypothesis is based on the assumption that a correct appraisal of one's opinions and abilities in relation to that held by others is instrumental. An incorrect appraisal can be punishing or even fatal in some situations. In terms of the individuation framework, the drive to evaluate one's own opinions and abilities in relation to those held by others is presumed to derive from a more basic need for a clearly defined self concept. Through the process of social comparison the individual establishes a frame of social referents with the self as a point of reference. In the process the self is distinguished from other in terms of similarities and contrast of opinions and abilities. Thus, for example, if the individual finds himself constantly in agreement with the opinions of others and they with him, as proposed here, the person in question will suffer from a fear of ego diffusions or lack of identity.

Thus, without doing violence to Festinger's theory of social comparison process, by a shift in emphasis, it may be reinterpreted as a theory of self orientation. In these terms the self is seen as developing in juxtaposition with others relative to abilities and attitudes; but the others chosen for comparison or orientation are those proximal in abilities and attitudes in order to provide a

more meaningful metric.

Festinger's third hypothesis may be interpreted as an extension of this aforementioned individuation framework. The preference for comparison with a person whose opinion or ability is closer to one's own can be explained in information theory terms. It is now proposed that comparison with a person whose opinions deviate greatly from one's own does not provide as much information about the self as comparison with a person whose opinions are more proximal. It will be assumed here that comparison with a deviate leads to a dichotomy separating the self and other; qualitative distinctions beyond this rudimentary metric is not perceived as necessary or helpful in clarifying the self. The other is simply categorized as different; too different to demand closer scrutiny. In this sense the self is defined in very gross terms. For a more refined delineation of the self a comparison of the self with persons in more proximal positions is required. Under these conditions the point of reference is scrutinized in comparison with the reflecting personal object in order to differentiate the self from others. Under closer scrutiny the self is necessarily defined with greater clarity.

Schachter's Psychology of Affiliation

Schachter (1959) has garnered an impressive body of evidence supporting the hypothesis that only children and first borns have a higher need for affiliation. By way of explanation, he proffers that the only child is more dependent or relies on others to a greater degree as a "source of approval, support, help, and

reference". These arguments are based in turn on Festinger's theory of social comparison, where the parents are the points of comparison.

The studies report significant relationships between birth order and desire to have a companion while awaiting his turn in a shock experiment, tolerance of shock, chronic alcoholism, acceptance and duration of psychotherapy, and fighter pilot effectiveness. These correlations between ordinal birth position and the diverse criteria are assumed to support the underlying hypothesis. Necessarily, this assumption is based on the further assumption that there is only one prominent or salient aspect of birth order. It is this latter assumption which is subject to criticism and revision.

In addition to the greater inherent dependency of the only child and the first born child, in terms of the present framework these same children are more individuated or personalized. Only children are accustomed to being clearly differentiated from other children of other families. Only a single unit of information is required to locate the only child; "the child of Mrs. Smith." The child from the larger family must be distinguished from his siblings as well as from his parents. "One of Mrs. Smith's children" is depersonalizing. Having become accustomed to individual prominence and personalized regard, it is hypothesized that the only child will continue to seek highly visible group positions or conditions under which self identity is facilitated. Thus, it may be anticipated that when threatened by conditions of deindividuation, the

only child will seek to recreate in so far as possible the single child-parent model wherein he was formerly so readily recognized by others and by himself.

Indeed, Schachter sights a study by Gewirtz (1948) and Beller (1948) in which 42 three and four year old children in the University of Iowa preschool were observed under standard conditions for four hours each over a four month period and were rated by their teachers on various types of dependency. However, to label their behavior as dependency may be viewed as a somewhat superficial interpretation. In the study in question the teachers rated frequency of seeking help, proximity, contact, attention, and recognition from adults. Summarizing those studies, Sears concluded that ordinal position is related to dependency. It is proposed here that ordinal position is associated to a sense of individuation. The only child requires the accustomed presence and recognition of adults to a greater degree because his identity is inextricably intertwined with an adult-child social matrix.

Since the present framework offers the bases of a more general system, it is proposed that the studies relating birth order and alcoholism and psychotherapy may be reinterpreted in terms of individuation. Thus, in terms of the present framework, as manifested by his proclivity for psychotherapy, the only child requires personal attention in order to maintain or restore periodically his self image. In fact, we can go one step further and hypothesize that the only child will prefer individual psychotherapy to group psychotherapy while the

latter born children will not indicate such a preference, at least to the same degree. Alcoholism, too, may be perceived as a form of depersonalization; a condition abhorrent to the first born but a condition to which the latter born may be somewhat inured.

The efficacy of the theory of individuation as opposed to Schachter's theory of dependency may be tested with reference to the sex patterns of the children in a family. The theory of individuation would predict that the only child of a given sex within a family and particularly in large families is more individuated than his or her brothers and sisters and would resort to psychotherapy more readily while his or her brothers and sisters would be numbered among the alcoholics more frequently. Again, using the information theory approach to individuation, the boy in a group of five girls and a boy is more differentiated than a boy in a group of 3 girls and three boys. Thus, the only child of a given sex is also hypothesized to develop a high need for differentiation which is manifested by recourse to psychotherapy. It is proposed here, in general, that the distinguishing characteristic of the only child is differentiation rather than dependency.

Having outlined the concept of ego identity and its consequences for social behavior and having reexamined two related theories of social behavior in terms of the ego identity framework, implications of the framework will be examined in a wide variety of social settings including the behavior of twins, the leader's cognitive style and group behavior, group behavior in an industrial setting, teaching techniques, and popularity ceiling effects.

The Social Behavior of Twins

After considering the relationship between individuation and birth order, consideration of simultaneous births and individuation is suggested. Not only are twins nondifferentiable by age but they are also difficult to differentiate by appearance in the case of some monozygotic twins. Thus, it is proposed that there is an inherent tendency for twins to become de-individuated or depersonalized; they tend to be perceived categorically as "the twins".... Moreover, since others respond to them jointly rather than individually, it must be predicted that they would have difficulty developing a self concept exclusive of the other member of the natural dyad.

This facet of twin development has not been totally ignored by developmental psychologists. Still, explorations along this avenue of inquiry have been peripheral rather than systematic. Lidy et al (1959) suggest that monozygotic twins tend to develop a symbiotic relationship without adequate ego differentiation.

Smith (1949) indicates that the problem of non differentiation may be solved by the twins themselves. Their struggle for independence, or individuation as is preferred here, is a conscious effort to stress the peculiarities of the separate twins. Smith suggests that such a struggle need not necessarily lead to quarrels; the twins often agree to be different. But "So long as no tangible differences exist between the partners, they can obviously not appear as individuals inside a pair connection..." "... Thus, we

are compelled to establish a discordance factor...." which results in a division of roles.

This discordance concept is closely related to the concept of individuation. Indeed striking similarity among two or more persons may be bewildering to the self and may result in the search for a different role merely for the sake of a difference which will provide a basis for self identity. One is reminded here of the Princess Margaret phenomenon. Her sister, Princess Elizabeth, now Queen of England, rehearsed the role of queen by virtue of primogeniture. Princess Margaret her younger sister, may well have been threatened by the prospect being continually overshadowed and obscured by a more prominent personage with whom she was inextricably connected. Thus, it is proposed that the younger princess adopted a less royal role and portrayed, to some degree, the iconoclast, who identified herself with the commoner and, in fact, finally married a commoner. Thus, similarity among persons forced into close relationships may be said to encourage antipodal behavior in order to avoid confusion of perception on the part of the actors themselves as well as their observers.

In some sense, this antipodal behavior on the part of closely related and similar persons is not unlike Erickson's concept of "negative identity". When self identity is threatened extreme behavior provides a clear and readily available definition.

Burlingham (1952) describes the plight of the bewildered parents of identical twins whom they can differentiate only with some difficulty. She hypothesizes that this confusion "often makes the mothers,

or fathers' attitude toward their twins less warm and spontaneous". Furthermore, Burlingham suggests that this attitude on the part of the parents is related to dissocial development. Again, in the present context, the dissocial behavior may reflect the struggle for identity through negative adaptation.

Individuation and the Leader's Perceptual Style

The implications of parent's personalizing proclivities with regard to twins or toward all of their children is not too unlike the implications of any power figures personalizing proclivities with regard to his subordinates. Thus, it is hypothesized that the extent to which the leader differentiates among the members of his group is positively related to the variance of the leader's ratings of the members as well as the satisfaction and productivity of the group members.

Fiedler (1960) conducted a series of studies which indicate that "psychologically distant leaders are more effective in promoting the productivity of task groups than leaders with psychologically closer interpersonal relations". The measure of psychological distance employed was obtained by asking the leader to describe the person with whom he would best get the job done and the person with whom he has, or has had, the greatest difficulty in working together. Indeed, the term "psychological distance" would appear to be a misnomer for the concept being measured by this rating system. In reality, the leader is being asked to discriminate between two persons. Apparently then, the leaders who were effective in discriminating between "good" and "poor" workers in some general sense are

more effective in promoting the productivity of task groups.

Even at this level, however, the results are only descriptive. Perhaps more fundamentally, differentiation among the group members by the leader or central power figure is associated with higher group productivity. Thus, in one sense, the leaders of the high productivity groups in Fiedler's studies used a merit rating system; individuals were rewarded according to their relative abilities. In terms of the present framework, Fiedler's results suggest that leaders of highly productive groups evaluated the members as individuals rather than as nondifferentiated parts of a greater whole, the group. Members of the more productive groups were individuated by their leaders.

The results of two recent research efforts in an industrial setting appear to support the aforementioned position. Kirchner (1961) and Hawkins (1962) both demonstrated that better supervisors showed more spread and less leniency in their ratings. Moreover, Kirchner (1961) also found that better supervisors regarded as strengths more often factors related to initiative and independent action. Less effective supervisors tended to reward group action, conformity, and "not rocking the boat"; whereas more effective leaders tended more to take for and reward independent action on the part of their subordinates.

Thus, it appears that leaders who differentiate in greater detail among the members of their groups tend to be more effective. The research reported to date has concentrated on a single indicator

of differentiation; the so called measure of "assumed similarity". Indeed, the differentiating behavior measured by the aforementioned index may be only one aspect of a general cognitive style or system of cognitive controls which the organism utilizes to structure a field of variegated objects.

Essentially, the differentiation process is the obverse of concept formation; the grouping of things according to some criterion. Necessarily a more inclusive concept will limit the degree of differentiation among the objects to be categorized. Thus, the attitude reflected by the statement, "All men are brothers", suggests a cognitive process in which fine distinctions among persons are overlooked; quite dissimilar social objects are perceived as equivalent in some gross sense.

It has been suggested (Kluver, 1936; Gardner, 1953) that judgments of equivalence or "equivalence range" may reflect important aspects of personality organization. On this basis it is proposed that the degree to which a leader differentiates personnel as measured by the index of "assumed similarity" is but one aspect of a general cognitive style; namely, equivalence range. In addition it is proposed that the leader who markedly differentiates the poor as opposed to the better worker may be said to possess a more narrow "equivalence range"; that is, the leader employs a larger number of distinct categories when organizing the perceptual field of social objects.

A variety of other measures of equivalence range or differ-

entiation may actually prove more reliable and more valid than Fiedler's index in predicting group performance. Thus, Gardner used an object sorting test where the subject was required to sort seventy-three common objects "in the way that seems most natural, most logical, and most comfortable" (Gardner, 1953, p. 219). Marrs (1955) used a "Behavior Grouping Test" in which the subjects were required to categorize 69 statements describing a variety of everyday behavior in the way that seemed most congenial to them, and a "Figure Group Test" in which the subjects were required to categorize Chinese idographs. Similarly, Sloane (1959) asked subjects to sort photographs of human faces. The Pettigrew Category Width Scale (1958) may also be relevant. In this latter scale, an index is derived which seemingly provides a measure of the subjects inclination for inclusive categories as opposed to exclusive or narrow categories. Of course it remains to be demonstrated to what extent these measures as applied to group leaders are, in fact, related to each other and to criteria of group morale and productivity.

It is now proposed that a more direct and objective measure of member differentiation on the part of the leader is the leader's memory of pertinent biographical information concerning the individual members of his group. The rationale is self evident. It is simply assumed that a leader who is motivated to distinguish among the members of his group will remember more personal details about the individual members. Interest in individual members is presumed to be reflected in memory of information concerning

individuals. Curiously, this assumption is relative to the old Army dictum "know your men". Caesar, it is told, knew the names of every man in his legion.

The knowledge that the key power figure possesses personal information about the group members motivates the members indirectly in and of itself since the members realize that the leader is aware of each member as an individual and is capable of noting and remembering the characteristics of individual performance. Thus, the leader's memory of the member's biographical information is presumed to reflect something about the leader's supervisory practices. Specifically, it is proposed that a leader with high knowledge of biographical information about the group members is concerned about the well being of the individual members as persons rather than as units of production only. In some sense, this is merely a restatement of the "human relations" approach to management. On the other hand, the position expounded here emanates from the members' needs for structure of the social environment about the self as a point of reference. When this need is satisfied, improvement in group morale and productivity is expected.

Likert (1961) suggests a similar management principle when he summarizes recent research reports and concludes that "subordinates react favorably to experiences which they feel are supportive and contribute to their sense of importance and personal worth"(p. 102). Unpublished data cited by Likert (p. 18) is particularly relevant here and reveals that supervisors of work groups with favorable job-related attitudes are much more interested in their subordinates

as persons than are the supervisors in charge of work groups with unfavorable job-related attitudes.

The results of a series of studies from the Personnel Research Board, Ohio State University (Stogdill & Coons, 1957) may be interpreted similarly. In a factorial study of subordinates descriptions of their leader's behavior, one of the factors which has been found consistently to be related to group maintenance or the strengthening of the group is consideration. The meaning of the scale is said to be best represented by leaders who do personal favors for team members, look out for personal welfare of team members, explains his actions to the team members, treats all team members as his equal, is friendly and approachable, and finds time to listen to team members. Again, in the framework of individuation, these leader behaviors appear to describe a power figure who is aware that the team is composed of a number of individuals who need and respond positively to personal attention and differentiation.

Depersonalization in Industry

Morale has been defined (Guion, 1961) as "the extent to which an individual's needs are satisfied and the extent to which that individual perceives that satisfaction as stemming from his total job situation". On the basis of this definition, individuation and morale appear to be closely associated. Lee (1932) and Miles (1932), for example, note that recognition of good work is one of the key incentives in industry. Kelley and Ware's study (1947) demonstrated that employees who were given systematic orientation show a lower turn-

over rate than do employees not so inducted into their jobs. Katz et al (1951) who studied the productivity, supervision, and morale among railroad workers found that supervisors of high producing railroad gangs as contrasted with supervisors of the "low" producing gangs took more personal interest in their employees. Finally, Lawshe (1945) found that there was greater absenteeism among machine operators who were trained on the floor than among those operators who had received vestibule training.

Each of these studies may be interpreted as indicating that personalization of employees is related to high morale. For example, in the Lawshe's study, where vestibule training was shown to be associated with higher morale, it may be hypothesized that the vestibule training was effective, in part, because under these conditions, the employees were not regarded as highly expendable and replaceable nonentities but rather as individual occupants of positions which required special training. Thus, the new employee was differentiated from those who did not possess the machine operator training; that is, he was individualized and located within a group by means of fewer bits of information.

Some of the utility of a testing program may be attributed to a similar placebo effect. The new employee who is selected and assigned in accordance with scores on a battery of tests can readily perceive himself as distinguished from and unique with respect to those who were not similarly selected and assigned. Thus, it may be anticipated that those selected on the bases of psychological tests will also show less absenteeism, lower turnover rate, and higher

morale.

The classic Western Electric studies (Roethlisberger & Dickson, 1939) concerning lighting, rest periods, and group effects in an industrial setting initially proved obfuscating to the researchers. The experimental designs were rather primitive and contribute to the difficulty of interpretation. Yet, a number of observations appear to be consistent with the framework presented here.

In one study of the series, a group of female employees were brought to another part of the plant and observed under regular working conditions with the exception that they were observed and interviewed under various conditions of rest periods. Production, in general, increased under all conditions including some control conditions. By way of explanation, it was noted that by separating the group, the members were not lost among the other hundred girls in the regular department. Moreover, the girls in the experimental group were consulted as to work procedures and were not merely told what to do; that is, the experimental group possessed some degree of fate control. In addition, the singled out group members seemed to respond positively to the attention paid them by high management. They were enthusiastic about the company's interest in their fate.

Overall, the experimental group members may be said to have been personalized or individuated. They were more easily identified than their former fellow workers by virtue of their separate working location; they had an opportunity to interact with management; management spoke to them directly as individuals rather than as a large group.

Thus, the studies may be interpreted as demonstrating, in part, that personalized supervision is positively related to productivity.

The present framework, however, enables us to proceed one step beyond this rather basic tenet of the human relations approach to industrial management. Not all members of the department in the Western Electric studies were personalized or singled out for special consideration. Not only were the members of the experimental group supervised in accordance with accepted principles of modern management, but they were singled out for the experimental treatment. It is contended here that the latter component may indeed have been the more cogent.⁴ Assuming that satisfaction is relative, the experimental groups' satisfactions may have been intensified by the exclusive application of the treatment; but the non experimental groups satisfaction may have been diminished by virtue of exclusion. The overall effect with regard to the entire group of workers was not reported; but it is not unlikely that the exclusive positive treatment of a few may have had a deleterious effect on the group as a whole. Thus, the problem is similar to that described with regard to the distribution of persons among categories. Here given a two category system, experimental versus non-experimental groups, the problem reduces to one of determining what the optimum percentage of the total population or the workers in this case should be assigned to each of the categories in order to maximize the satisfaction of the group as a whole.

The implications of the theory of individuation will be sketched

with reference to two other social situations; teacher-pupil relations and popularity ceiling effects.

Depersonalization and Instructor-Centered Discussion

The traditional classroom is a depersonalized group setting. Only the teacher is distinguished in any sense of location; the class members under the traditional lecture system are auditors who are distinguished from each other only through examinations. Even here, however, the individual class rank remains anonymous.

In contrast, student-centered instruction (Hoffman & Plutchik, 1959) may be said to individuate the class members through communication among the students and teacher or among the classroom occupants in general; the students' background and participation are considered in goal setting; and the teacher encourages the individual student to take increasing responsibility for his own development.

McKeachie (1954) suggests that underlying difference between student-centered as opposed to instructor-centered instruction is "fate control"; that is, the degree to which the student feels able to influence his own fate. Thus, it might be anticipated that the personality characteristics of the class member would be associated with a preference for the student-centered vs. instructor-centered approach. Consistent with our earlier arguments, it would again be anticipated that the only child and first born would least prefer the instructor-centered or depersonalized approach.

In a sense, the instructor-centered discussion may be viewed as a persuasion process emanating from the instructor and directed

toward the auditors as a relatively undifferentiated group and designed to render the auditors even less differentiable in that they will have been changed uniformly in some respect toward a pre-ordained objective. Following the discussion, the instructor expects the members of the class to show evidence of uniformity consistent with the objectives of the course. From this point of view, instructor-centered teaching is tantamount to a de-individuation procedure; with this distinction, however; the class members are free to resist the persuasion attempts of the instructor. Thus, it is hypothesized that the members of the group will change their opinions in accordance with the objectives of the instructor-centered course to the extent that they are individuated. It is proposed that the members of a group are less likely to resist de-individuation procedures (persuasion by the instructor) if their identity as individuals is clearly established and maintained through other means such as familiarity with the students' names, their individual educational objectives, and perhaps biographical information.

Popularity Ceiling

The United States presidential election is assumed to be a two category allocation model of individuation; one group of voters support candidate "A" and another group of voters support candidate "B". Preceding the designated election day, the comparative strength of the opposing candidates is estimated by various pollsters and reported to the prospective voters. It has been conjectured repeatedly that the feedback of this information influences the

"true score" in the final election returns since the voters are assumed to respond to the indicated responses of other voters as well as to the candidates themselves. It is now proposed that one component of the voters' reactions to the responses of other voters is a popularity ceiling effect deriving from individuation tendencies.

Consistent with the individuation framework as applied to a two category allocation system, maximum discrimination among the population is achievement under conditions of a 50-50 distribution.

Any deviation from this even split is assumed to generate an equilibrating force toward maximum differentiation among the categorized social objects. Moreover, it is proposed that the equilibrating force is an inverse function of the deviation from the even distribution. The issue is, of course, confused by the second component of feedback, that is, pressures toward uniformity.

An experiment to explore these forces toward fractionation is suggested in which subjects having completed opinion questionnaires are informed with regard to each item that 50%, 60%, 70%, 80%, 90%, or 100% of a sample of persons agreed with the statement. The number of subjects changing their estimates would be analyzed in accordance with and counter to the majority effect as a function of the majority effect preponderance.

Political splinter and coalition phenomena may stem from similar tendencies on the part of groups and their members to establish and maintain their identity. For example, it may be hypothesized that as the European Market becomes increasingly inclusive, dis-

integrating de-individuation forces are generated leading to the creation of splinter groups unless some long term commitment is enforced. A similar analysis of the fractionation within the Communist Party now in evidence is similarly suggested, but for the present remains outside the scope of this paper.

Overview

As stated at the outset, the theory of individuation evolves from a consideration of the socialization process whereby the individual becomes assimilated by various groups and yet strives to maintain a degree of individuality, to preserve a stable self concept which serves as a point of reference. The theory assumes that in the Western culture, the social environment is structured about the self as a point of orientation although there are individual differences in this regard. Thus, individual needs and groups needs are invariably in conflict to some extent. A number of conditions which exacerbate this conflict were outlined.

Individuation was abstracted as a prominent component in Festinger's Theory of Social Comparison, Schachter's Theory of Need for Affiliation, and Fiedler's Assumed Similarity framework. Finally, findings concerning twins' leadership, industrial morale, student reactions to teaching techniques and popularity ceiling effects were interpreted within the individuation framework. The reinterpretation of other subtheories, in terms of individuation, the proffered explanations of a wide variety of phenomenon in these same terms, and the evolving hypothesis, indicate the immediate utility of the individuation framework. Some of the initial ex-

periments designed to test some of the aforementioned hypotheses are reported in the following pages.

Footnotes

1. The research program represented in part by this theoretical paper was supported by the United States Army under contract No. DA - 49 - 083, OSA - 2321.
2. The author gratefully acknowledges the many valuable comments and criticisms of Charles Hawkins who also is from the Center for Research on Social Behavior, University of Delaware.
3. The sociological concepts of alienation, anomie, and personal disorganization are excluded in this paper; not because they are unrelated but rather because deficiencies in definition detract from their utility (see Nettler, 1957).
4. Isolation effects were examined but were not found to be related to productivity in and of itself (Roethlisberger & Dickson, 1939).

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Individuation Proclivities of the Leader Associated with
the Morale and Productivity of Military Units

by

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Individuation Proclivities of the Leader Associated with
the Morale and Productivity of Military Units

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The field study reported here evolved from the Theory of Individuation and Socialization (Ziller, 1962). Assuming that ego identity is a basic point of reference for new social experiences and that the introduction to a large organization presents a serious threat to ego identity, the experiment describes how the threat of ego diffusion may be counteracted by leaders with perceptual proclivities for individuation.

The self concept of the child at the early stages of development is difficult to define without including the characteristics of the parents or parent surrogates with whom the child is inextricably enmeshed. However, reduced exclusive interaction with parents also demands and necessarily creates a more differentiated self concept. Emerging from the dependent developmental period, the child begins to distinguish himself from other group members, is recognized by other members, and enables other members to distinguish or locate him among the members. It is assumed that the process of the development of an identity as a separate unique individual is primarily perceptual; the self is defined in terms of similarities and contrasts to the environment, both social and material.

As has already been noted, one of the earliest distinctions which the child must make is that between ego identity and group identity; that is, he is required to differentiate the self from the family nexus. Failure to achieve the distinction may be described as ego diffusion (Erikson, 1959). It is proposed that the same process is repeated whenever an individual joins a new

group. Ego identity, group identity, and ego diffusion are the primary considerations in the socialization process. Since identity is established, in part, in terms of the social field as a frame of reference, a changed social field necessitates a reexamination of identity. Thus, the process of self identification and identification by the group members is reactivated with reference to the newcomer because of the changing social field.

In some organizations, self realization is facilitated through the assignment of easily distinguishable positions and by the role expectations associated with the corresponding position. In other organizations, however, a large number of positions and the accompanying roles are relatively undifferentiated as, for example, the members of an infantry platoon. In general, it is proposed that the search for self identity and the concomitant anxiety are particularly poignant in bureaucratic organizations where positions and roles are standardized for purposes of control and in order to insure the fidelity of communications.

Upon entering a bureaucratic organization, the new member encounters difficulty in mapping the social field in relation to the self. Contrasts and similarities among the social elements depend upon data gathering and the subsequent differentiation processes. During this initial period, the new member is distinguished largely by the fact that he is new. If now, the social environment is difficult to fractionate into individual and contrasting components (as at certain levels in a bureaucratic organization), the differentiation process may be decelerated. In addition to the difficulty of differentiation of self from others, others also have difficulty identifying him. Furthermore, it is proposed that persons outside such organizations tend to respond to the group as a category rather than as a collection of differen-

tiable persons ("He is a soldier."). These factors are assumed to contribute to the new member's anxiety and to present a threat to personal identity and the stability of the self concept.

It is assumed here that in a bureaucratic organization, the individuating proclivities of the immediate supervisor is the mainstay in establishing a personal identity and in maintaining the self concept. Individuation is defined as a person's subjective mapping of the social world in which the self is differentiated to a greater or lesser degree from the other social objects in the field.

In keeping with the self theory outlined at the outset, it is proposed that the new member has a need to be considered as an individual; he seeks recognition of the self as he perceives it; he must feel that his presence in the organization makes a difference--that he, as an individual, would be missed. It is now proposed that the immediate supervisor is in the optimal position to satisfy these needs because of his inherent power in the organization but also, in the first level military unit in particular, the leader is the most stable member of the group in terms of personnel change or turnover.

It is further proposed that a direct and objective measure of member differentiation on the part of the leader is the leader's memory of pertinent biographical information concerning the individual members of his group. The rationale is self evident. It is simply assumed that a leader who is motivated to distinguish among the members of his group will remember more personal details about the individual members. Interest in individual members is presumed to be reflected in memory of information concerning individual members. Curiously, this assumption is relative to the old Army dictum "know your men." Caesar, it is told, knew the name of every soldier in his legion.

The knowledge that the key power figure possesses personal information about the group members may be assumed to motivate the members indirectly in and of itself since the members realize that the leader is aware of each member as an individual and is capable of recalling the characteristics of individual performance. Furthermore, the leader's memory of the member's biographical information is presumed to reflect something about the leader's supervisory practices. Specifically, it is proposed that a leader with high knowledge of biographical information about the group members is concerned about the well being of the individual members as persons rather than as an undifferentiated or standard unit of production only. In some sense, this is merely a restatement of the "human relations" approach to management. On the other hand, the position expounded here emanates from the members' needs for structure of the social environment about the self as a point of reference. When this need is satisfied, improvement may be anticipated in group morale and productivity.

Likert (1961) suggests a similar management principle when he summarizes recent research reports and concluded that "subordinates react favorable to experiences which they feel are supportive and contribute to their sense of importance and personal worth" (p. 102). Unpublished data cited by Likert (p. 18) is particularly relevant here and reveals the supervisors of work groups with favorable job-related attitudes are much more interested in their subordinates as persons than are the supervisors in charge of work groups with unfavorable job-related attitudes.

The results of a series of studies from the Personnel Research Board, Ohio State University (Stogdill & Coons, 1957) may be interpreted similarly. In a

factorial study of subordinates' descriptions of their leader's behavior, one of the factors which has been found consistently to be related to group maintenance or the strengthening of the group is consideration. The meaning of the scale is said to be best represented by leaders who do personal favors for team members, look out for the personal welfare of team members, explain their actions to the team members, treat all team members as their equals, are friendly and approachable, and find time to listen to team members. Again, in the framework of individuation, these leader behaviors appear to describe a power figure who is aware that the team is composed of a number of individuals who need and respond positively to personal attention and differentiation.

Thus, it is hypothesized that higher morale and productivity are found in teams within large organizations whose first line supervisors characteristically individuate their team members.

Procedures

Subjects

Forty-three United States Army teams from Fort Benning, Georgia, participated in the study. The 43 teams included 11 howitzer gun sections and 32 infantry squads along with their leaders who were non-commissioned officers. The teams varied in size from five to ten members. A team of median size was composed of a non-commissioned officer and six enlisted men. No team was composed of less than a leader and five men or larger than a leader and ten men. A total of 300 soldiers were involved in the field study.

Directions to Ss

Today, your squad is going to participate in a series of paper and pencil questionnaire and performance tasks which will take about two hours. This is a part of a study of leadership-membership and team performance which

psychologists for the University of Delaware are conducting for the Adjutant General's Office, of the United States Army. Through these studies, we hope to be able to recommend procedures which will increase the effectiveness of military teams. You will notice that our main interest is in team performance. However, necessarily, we are also concerned with individual performance.

Needless to say, the usefulness of our findings depend upon how sincere you are in your performance in these tests. We assure you that no military personnel will be permitted to see your individual answer sheets nor will know how your squad responded to these questions.

Again, this is a study to help make our military forces more effective. Your cooperation is needed.

We will issue a packet of questionnaires to each person. Start with the Leadership Behavior Description Questionnaire and work on through as rapidly as possible. Please raise your hand if you have any question whatsoever, or the least doubt as to what you are to do.

All right--go ahead!

Variables

The four independent variables included; leader's memory of member's biographical data, leader's memory of individual member performance on a team push-up task, leader-member agreement of member's ratings of military effectiveness, and leader consideration for individual members, all of which were presumed to be measures of the leader's cognitive style with regard to individuation. The dependent variables included three measures of morale and two measures of team performance. The questionnaires and rating scales used in the study are included in appendices A to D.

Measures of individuation. Variable 1, the leader's memory of members' biographical data, was derived from a biographical questionnaire composed of 14 items. Seven of the items concerned job oriented information; for example, "What is his primary MOS?" (MOS is an abbreviation for Military Occupational Speciality.) The remaining seven items concerned personal information such as religion and father's occupation. (See Appendix A.) A similar form was completed by each soldier. The leader's score was the mean number of correct items for all members of his team.

Variable 2, the leader's memory of the individual member's performance, was a measure derived from the leader's observance of a group exercise. In this exercise, the members of the team were assigned numbered positions along a chalk line. In order to equate the teams for group size, only six positions were open and these were filled by the first six team members who entered the testing room. The others were dismissed. Teams with less than six members were not included in the study. The leader assumed a commanding position in front of the squad and the test director read these instructions to the team leader:

Your team's objective is to perform as many push-ups as possible while maintaining cadence. Each team member is to perform as many push-ups as possible while maintaining cadence. You are to count cadence. Each member should keep count of how many push-ups he completed before dropping out of cadence. One push-up is completed when you have returned to the starting position. The event referee will call the number of the team member when the team member can no longer perform or when he falls out of cadence. When the referee calls their number they are to stand up

in place. Again, the primary objective is to see how many push-ups your team can execute as a group. Remind the team members, however, to keep count themselves of the number of push-ups that they completed.

When the team had completed the task, the members left the room. As they left each member informed the event referee how many push-ups he had completed. Meanwhile, the test administrator was closeted with the leader who was asked to rank order the team members with regard to the number of push-ups that they had each completed. The agreement between the leader's memory and the recalled performance of the team member was measured by means of a rank-order correlation and provided the second measure of the team leader's individuating propensities.

Variable 3, agreement between the leader's and the group member's ratings of the individual member's military skill, was the rank-order correlation between the leader and group member's consensual rank-order of the members on "military skill." The term "military skill" was not explained but it was assumed to be an overall rating of soldiering. The measure assumes that the individual group member's fellow soldier's ratings of his military skill is one of the best criterion available from which it would follow that greater agreement between the group ratings and the leader's rating would again indicate the leader's interest in individual performance and in general, his orientation and regard toward individual team members.

Variable 4, the leader's consideration of the members was derived from the Leader Behavior Description Questionnaire developed by the Personnel Research Board, Ohio State University (Stogdill & Coons, 1957). The original 80 item questionnaire was in multiple choice format and required the team members to describe the behavior of their leader on a five-point scale varying

from "He always acts this way" to "He never acts this way." Only 30 of the original items were included in the form used in this study, 15 of the consideration items and 15 buffer items. Moreover, 4 of the original 15 items of the consideration scale were not scored since they did not appear to be consistent with the theoretical framework of the present study. (The 11 items comprising the form used in the present study is included in Appendix B.) The final score was the mean of the weighted responses of the team members.

The scale was factor analytically derived. The odd-even estimate of the reliability of the original 15 items of the scale are .87 (Stogdill & Coons, 1957, p. 47). The meaning of the original scale is said to be best represented by leaders who do personal favors for team members, look out for the personal welfare of team members, treat all team members as his equal, are friendly and approachable, and find time to listen to team members. This was the last of the four measures presumed to be related to the leader's individuating cognitive style with regard to the team members.

Of the five dependent variables, three were measures of team morale. Two of these were derived from cluster and factor-analytic techniques by Cureton (1960). The scales were adapted in the present study for use with Army rather than Air Force personnel as they were originally designed. The measure consists of the weighted responses to twelve questions and constituted, essentially, a broad evaluation of the leader by their group members (see Appendix C). For example, "My supervisor's order and instructions are almost always clear to me" or "How good is your supervisor at handling people?" or "How well does your supervisor know the jobs of the men under him?"

The second morale factor concerned satisfaction with the unit and its leadership and includes items such as "The men in my unit have a lot of respect for each other." and "Do you feel that you are really a part of the unit you work with?". (See Appendix D).

The third measure of morale is similar to that used in an earlier laboratory experiment in this series and concerns the members' expressions of individuation (Hawkins & Ziller, 1962). The scale consisted of four items to which the subjects responded on a six point scale ranging from agree very strongly to disagree very strongly. The items included "I feel I am given a chance to be an individual in my squad.;" "Differences between people are not taken into account enough in my squad.;" "Everyone in my squad knows pretty well what I am like.;" and "You're better off if you don't let anyone know what you're like in this squad." The uncorrected product moment correlations of each item with the total score ranged from .49 to .70.

Two measures of group performance were obtained. The first was an overall rating of the team's military effectiveness submitted jointly by the commanding officer and the platoon leader. The ratings were submitted on an 11 point scale ranging from "One of the worst teams I have seen" through "An average team." to "One of the best teams I have seen." Only these three points on the scale were described.

The second index of team performance was the mean number of push-ups completed by the team members.

.. The tests were administered in one two-hour session. Four teams were tested simultaneously on the paper and pencil tests, but the teams performed separately for the push-up task. The team ratings were submitted by personnel who were totally unaware of the results of the testing program.

Results and Discussion

In viewing the results presented in Table 1, it was readily seen that leader biographical memory, leader consideration, supervision morale, unit morale, importance morale, and team rating were all significantly interrelated. However, the central hypothesis concerns the relationship between the measures of leader individuation and the indices of member morale. Only a cursory inspection of the results is sufficient to reveal that leader memory of member biographical information and leader consideration are the most efficacious independent variables. Both of these instruments were initially assumed to be measuring some of the same person-oriented characteristics of the leader, although the correlation between the two measures is low ($r = .31$). Nevertheless, it may be assumed that both instruments measure certain aspects and perhaps different aspects of the leader's individuating tendencies. The biographical memory instrument, however, may be said to be the more direct measure, since the score is derived from the leader's responses rather than from the member's responses; thus avoiding the members as intermediates and, consequently, avoiding an additional interpretive step.

The leader's memory of the member's biographical information is associated with morale (supervision, $r = .36$; $p < .05$), morale 2 (military unit, $r = .26$; $p < .10$), and morale 3 (importance, $r = .25$; $p < .10$). Leader consideration is associated with the same criteria but at a substantially higher level ($r = .65$; $p < .01$; $r = .35$, $p < .05$; $r = .59$, $p < .01$).

In some sense, however, the leader consideration index itself is a measure of morale since the members were asked to describe the behavior of their leader in an evaluative manner. Thus, the correlation coefficient of $.31(p < .05)$

between leader's memory of biographical information and leader consideration as an index of morale may also be cited in support of the central hypothesis: Higher morale is found in teams within large organizations whose first line supervisors characteristically individuate their team members.

Fundamentally, it was proposed that the members of teams whose leaders tend to differentiate among the members are known to the leader as individuals; the members perceive that their presence in the group makes a difference and associated with this perception of individuated membership, the team members respond with satisfaction to the leader and to the group as a unit.

It should be noted, however, that since the measure of leader consideration was derived from the team members descriptions of the leader, the results relating consideration and morale are of a response-response nature; whereas the results with regard to the biographical memory and the morale criteria span a greater gap; that is, the gap is greater between leader response (biographical memory) and member response (morale) as opposed to member response (leader consideration) and member response (morale).

Although the primary purpose of the study concerned the relationship between individuation and morale, it would be remiss to ignore the results which relate individuation and team ratings as well as morale and team ratings. The product-moment correlation between leader memory of member biographical information and team ratings was .24 ($p < .10$); and the correlation between leader consideration and team rating was .29 ($p < .05$). These results provide some support for the initial framework which proposed that knowledge of the team members as individuals facilitates optimal assignment and also provides some assurance to the members that individual contributions to the group will be

recognized and remembered as well as individual responsibility for unsatisfactory group performance. Individual mediocrity or less is not masked by membership in the collective when the leader tends to recognize the team members as individuals.

The results concerning team push-up performance were somewhat puzzling. Two results were statistically significant but opposite in sign. The first of these, the correlation coefficient between leader-member rating agreement and push-up performance ($r = .43$, $p < .05$), is consistent with the individuation framework. Teams in which the leaders are familiar with the relative military effectiveness of their members (high individuation leaders) perform more push-ups. The significance of this finding was minimized, however, since this was the only statistically significant result involving leader-member rating agreement. The meaning of this variable remains unclear.

The second statistically significant result involving team push-up performance was counter to expectations. Teams with high morale performed less push-ups than teams with low morale ($r = -.42$, $p < .05$). Moreover, ignoring the obviously artifactual correlation between leader memory of member push-up performance and mean number of push-ups by the team members, it was noted that five of the seven correlation coefficients involving team push-up performance were negative in sign. Particularly noteworthy were the negative correlations between the leader's memory of biographical information and team push-up performance ($r = -.20$) and between team ratings and team push-up performance ($r = -.20$). These results together with the statistically significant results with regard to morale, indicate that teams with higher supervision morale, teams rated higher by their commanding officers, and teams in which the leaders

remembered more biographical information about the members performed less push-ups. Although the sign test is not statistically significant, the results suggest the intriguing conclusion that superior teams in the above sense perform less well on some tasks. It was within the task characteristics that the solution to this enigma was sought.

Since the task was administered by civilians and was not observed by military superiors beyond the first line supervisory level, it was proposed that the members of the more individuated, more cohesive, or superior teams being more familiar with their leader's expectations and knowing that their leader was already familiar with their individual capabilities on more salient tasks, perceived the situation as one in which it was unnecessary to respond to the individual competitive aspects of the task and consequently performed only at a marginally acceptable level. On the other hand, it is proposed that members of less cohesive, lower rated, and less individuated teams perceived the task as a unique opportunity to reveal themselves to the leader and other group members as individuals by performing unusually well.

Summary

The field study described here evolved from a theory of individuation and socialization. Assuming that ego identity is a basic point of reference for new social experiences and that the introduction to a large organization presents a serious threat to ego identity, the experiment describes how the threat of ego diffusion may be counteracted by leaders with perceptual proclivities for individuation. Individuation was defined as a person's subjective mapping of the social world in which the self is differentiated to a greater or lesser degree from the other social objects in the field. Thus, it was proposed that

higher morale is found in teams within large organizations whose first line supervisors characteristically individuate their team members.

Forty-three United States Army teams from Fort Benning, Georgia participated in the study. The four independent variables, presumed to be measures of individuation, included leader's memory of individual member's biographical data, leader's memory of member's individual performance during a group push-up task, leader-member agreement on member's rating of military effectiveness, and leader consideration for individual members. The dependent variables included three measures of morale and two measures of team performance.

The central hypothesis relating measures of leader individuation proclivities and member morale was supported by the results. Leader memory of the member's biographical information was associated with supervision morale ($r = .36$, $p < .05$), unit morale ($r = .26$, $p < .10$), member's expression of importance in the group ($r = .25$, $p < .10$) and leader consideration as described by the team members ($r = .31$, $p < .05$). Leader consideration was associated with the same first three criteria but at a substantially higher level ($r = .65$, $r = .35$, $r = .59$).

It was also noted that the two indices of leader individuation tendencies (biographical memory and consideration) ratings were also significantly associated with team ratings, ($r = .24$, $p < .10$ and $r = .29$, $p < .05$ respectively).

These latter results provide some support for the initial framework which proposed that knowledge of team members as individuals facilitates optimal assignment and also provides some assurance to the members that individual contributions to the group will be recognized and remembered as well as individual responsibility for unsatisfactory group performance.

Finally, it was found that teams with high morale performed less well on a task with low face validity.

Appendix A

Biographical Questionnaire for
Team Leaders

Squad Leader's Name _____

Soldier's Last Name _____

Directions: This is a test of how well you know your men. There is one questionnaire for each man in your squad. The questions concern information about their civilian and Army backgrounds. Complete each questionnaire insofar as you are able.

- _____ 1. How many more years does he plan to stay in the Army?
- _____ 2. What is his primary MCS?
- _____ 3. How many years has he served in the Army?
- _____ 4. Did he enlist or was he drafted?
- _____ 5. What is his first name?
- _____ 6. What was the highest grade he completed in school?
- _____ 7. What was his main civilian occupation?
- _____ 8. What is his marital status?
- _____ 9. What is his religion?
- _____ 10. What does he consider as his home state?
- _____ 11. What does he consider his home town?
- _____ 12. Who is his best friend in the squad?
- _____ 13. What are his two favorite sports?
- _____ 14. What is his father's present occupation?

Appendix B

Leadership Behavior Description

Directions: The questions which follow make it possible to describe the behavior of your squad leader. The items simply describe his behavior; they do not judge whether the behavior is desireable or undesireable. Therefore, in no way are the questions to be considered a "test" either of the ability of the person answering the item or of the quality of the team leader's behavior. We simply want a description of what he does.

Your answers will be sent to the University of Delaware for analysis. They will not be seen by military personnel.

Please record your answers to each of the items on the answer sheet which is furnished you for that purpose. Blacken space "a" on the answer sheet if he always acts this way; space "b" if he often acts this way; space "c" if he occasionally acts this way; space "d" if he seldom acts this way; and space "e" if he never acts this way.

1. He does personal favors for his team members.
2. He does little things to make it pleasant to be a member of the team.
3. He is easy to understand.
4. He finds time to listen to team members.
5. He looks out for the welfare of individual team members.
6. He treats all team members as his equals.
7. He is willing to make changes.
8. He is friendly and approachable.
9. He makes team members feel at ease when talking with him.
10. He puts suggestions by the team into operation.
11. He gets team approval on important matters before going ahead.

Appendix C

Supervision Morale

1. My supervisor's orders and instructions are almost always clear to me.
 - a. Strongly agree
 - b. Agree
 - c. Undecided
 - d. Disagree
 - e. Strongly disagree
2. How do you feel after your supervisor has talked to you about a mistake in your work?
 - a. Not bad at all--he is always helpful.
 - b. Not bad--he just shows me what I did wrong.
 - c. Like I would if any other supervisor talked to me.
 - d. Fairly bad--he always talks as though I should have known better.
 - e. He makes me feel like two cents.
3. How well does your supervisor know the jobs of the men under him?
 - a. Thoroughly
 - b. Quite well
 - c. Well enough
 - d. Not too well
 - e. Not at all well
4. My supervisor gives most of the credit to our unit when we do a good job, instead of taking it himself.
 - a. Strongly agree
 - b. Agree
 - c. Undecided
 - d. Disagree
 - e. Strongly disagree
5. How good is your supervisor at handling people?
 - a. One of the best.
 - b. Better than most
 - c. About average
 - d. Not as good as most
 - e. One of the worst.
6. How much effort does your supervisor make in looking after the welfare of his men?
 - a. All he possibly can
 - b. Quite a lot
 - c. About an average amount
 - d. Not very much
 - e. Hardly any at all

Appendix C (Continued)

7. When you go to your supervisor with a question about your work, what does he do?
 - a. He almost always takes time to give me a clear and detailed answer.
 - b. He usually gives me an answer which is clear enough to get the job done.
 - c. He usually gives me an answer which leaves me in a fog.
 - d. He usually gives me the brush-off
 - e. He is likely to bawl me out.
8. My supervisor is quick to take care of complaints brought to him by the men.
 - a. Strongly agree
 - b. Agree
 - c. Undecided
 - d. Disagree
 - e. Strongly disagree
9. How do you feel after making a suggestion to your supervisor about the work?
 - a. Very good--he always considers my ideas carefully and uses them if possible.
 - b. Fairly good--he shows real interest
 - c. Good enough--he shows some interest
 - d. Not too good--he shows little interest
 - e. Pretty bad--he seems to resent suggestions.
10. How much favoritism does your supervisor show in dealing with his men?
 - a. None at all
 - b. Not much
 - c. About an average amount
 - d. Quite a lot
 - e. A very great deal.
11. Does your supervisor pass the buck to the men under him when he makes a mistake?
 - a. Never
 - b. Seldom
 - c. Occasionally
 - d. Fairly often
 - e. Almost every time.
12. Would your supervisor go to bat for you and back you up if something went wrong that was not your fault?
 - a. He would always back me
 - b. He would usually back me
 - c. He would back me about half the time
 - d. He would back me occasionally
 - e. He would hardly ever back me.

Appendix D

Unit Morale

1. The men in my unit have a lot of respect for each other.
 - a. Strongly agree
 - b. Agree
 - c. Don't know
 - d. Disagree
 - e. Strongly disagree
2. My dealings with my officers are
 - a. Very pleasant
 - b. Fairly pleasant
 - c. Sometimes pleasant, sometimes not
 - d. Fairly unpleasant
 - e. Very unpleasant
3. I would rather be with my own unit than with any other unit I know of.
 - a. Strongly agree
 - b. Agree
 - c. Uncertain
 - d. Disagree
 - e. Strongly disagree
4. How many of your present Non-Coms are the kind you would want to serve under in time of war?
 - a. All of them
 - b. Most of them
 - c. About half of them
 - d. Not very many of them
 - e. None of them
5. If you were going overseas right now, would you rather go with your present unit or with a different unit?
 - a. Definitely my present unit
 - b. There is one other unit I would rather go with
 - c. Any one of two or three other units
 - d. Any one of a number of other units
 - d. Almost any other unit.
6. How do the Non-Coms in your company stack up against those in other company's you know about?
 - a. Better than any others I know about
 - b. Better than most, though not the very best
 - c. About the same as most others
 - d. Not as good as most, though not the worst
 - e. The worst in any Company I know about

Appendix D (Continued)

7. How do the OFFICERS in your unit stack up against those in other units you know?
 - a. Better than any others I know about
 - b. Better than most, though not the very best
 - c. About the same as most
 - d. Not as good as most, though not the worst
 - e. The worst in any unit I know about.
8. Do you feel that you are really a part of the unit you work with?
 - a. I really belong
 - b. I belong in most ways
 - c. I belong in some ways
 - d. I belong in very few ways
 - e. I am never really a part of the unit I work with
9. How many of your present OFFICERS are the kind you would want to serve under in time of war?
 - a. All of them
 - b. Most of them
 - c. About half of them
 - d. Not very many of them
 - e. None of them
10. How well do you think your unit is run?
 - a. Very well
 - b. Pretty well
 - c. About as well as most
 - d. Not as well as most
 - e. Very poorly
11. How do you think other units rate your unit?
 - a. Just about the best
 - b. Very good
 - c. Good enough
 - d. Not very good
 - e. Just about the worst

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Footnotes

- 1 The data collection phase of the project was greatly facilitated through the help of Colonel G. H. Ragsdale, Commander of the ROTC Unit, University of Delaware, and Dr. Arthur Drucker, Human Factors Research Branch, Adjutant Generals Office, United States Army, Washington, D. C. We are particularly indebted, however, to all the officers and men of the Second Infantry Division, Fort Benning, Georgia, who served as subjects in the project and to their commanding officers, General C. H. Chase, and Colonels F. A. Osmanski, J. E. Harding, and G. M. Bacharach, who not only expedited the data collection process but also took an active interest in the study itself. Finally, we wish to express our thanks to Edward Thompson, James Driscoll, Sarah Straughn, and Devika Malhotra who aided in the data collection and analysis phases of the project.

Table 1

Intercorrelations of Four Measures of Leaders' Individuating
Tendencies, Three Measures of Team Morale,
and Two Measures of Team Performance
(n = 28 to 43)

	1	2	3	4	5	6	7	8	9
1. Leader memory of member's biographies	.01 (27)	.06 (35)	.31** (43)	.36** (43)	.26* (43)	.25* (43)	.24* (42)	-.20 (28)	
2. Leader memory of member's performance		.26 (22)	.09 (27)	-.05 (27)	-.15 (27)	-.28 (27)	.02 (26)	.27 (27)	
3. Leader-member rating agreement			-.06 (35)	.10 (35)	-.05 (35)	.06 (35)	-.06 (34)	.43** (2)	
4. Leader consideration				.65** (43)	.35** (43)	.59** (43)	.29** (42)	.03 (28)	
5. Morale 1, supervision					.62** (43)	.59** (43)	.38** (42)	-.42** (28)	
6. Morale 2, Unit						.45** (43)	.33** (42)	-.13 (38)	
7. Morale 3, Importance							.36** (42)	-.13 (28)	
8. Team rating								-.20 (27)	
9. Push-up performance									

* Significant at the .10 level of confidence.

** Significant at the .05 level of confidence or better.

Note: Incomplete forms and the necessity of controlling for group size on the push-up task are responsible for the variations in the sample.

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Leader Assumed Dissimilarity as a Measure of
Prejudicial Cognitive Style

by

Robert C. Ziller

Technical Report No. 6

to the

Department of the Army
The Adjutant General's Office
Research and Development Division
Washington 25, D. C.

for

Contract Number DA-49-083 OSA-2321

Leader Assumed Dissimilarity as a Measure
of Prejudicial Cognitive Style

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Fiedler (1960) has summarized the results of an impressive series of studies indicating that leaders who maintain a greater psychological distance between themselves and the members (assumed dissimilarity) are more effective in promoting group productivity than are leaders with psychologically closer interpersonal relations. By way of explanation, it was proposed that psychologically closer and warmer relations with subordinates make it difficult for the leader to impose disciplinary measures and encourages rivalries and charges of favoritism.

Although a variety of groups in a variety of settings were studied in the aforementioned series, closer analysis of these groups suggested that the sample was less catholic than had heretofore been assumed. In the studies of basketball teams, surveying teams, B-29 bomber crews, and open hearth shops the groups involved were in an advanced stage of development. All groups were well beyond the initial stages of training; all were being evaluated with respect to their ability to achieve a high standard of performance according to objective and patent criterion. In addition, the leaders, in most cases, were in positions which enabled them to control the selection, assignment, and/or replacement of personnel. Finally, the results pertain, for the most part, to groups in which the leader's were accepted by the group members. These restrictions on the experimental groups necessarily restrict generalizations of Fiedler's findings.

Still, the major criticism of the program of research concerning assumed similarity is of a statistical nature (Cronbach, 1958). The index of assumed

similarity is essentially the difference between the descriptive ratings of a person with whom the respondent has been able to work best and the person with whom the respondent has been able to work least well. Cronbach (1958) incisively observed that this subtraction score "leads to an unparsimonious description of events" since the descriptions of the high and low person could be compared separately; and that "dyadic analysis is a breeding ground for artifacts."

In answer to these criticisms, several more direct methods of analysis of the same basic data have been suggested (Cronbach, 1958). Thus, Kirchener (1961) and Hawkins (1962) both demonstrated that better supervisors (as rated by their superiors) showed less leniency in their ratings of subordinates, but especially toward the low reference person in the Fiedler dyadic scale forms. Both of these latter experiments suggest that the leader of the more productive industrial units are more punitive with regard to subordinate whose performance is marginal or less.

The present experiment was undertaken in an effort to investigate the applicability of Fiedler's findings to United States infantry squads and artillery sections under training conditions. In this study the leaders of high and low productivity teams as rated by their commanding officers were compared with regard to assumed similarity indices; mean ratings of the low reference co-worker; mean ratings of the high reference co-worker, and points selected on the descriptive ratings scales of the low reference co-worker. The latter analysis provides a more detailed description of the leader's ratings tendencies than any attempted heretofore.

Procedure

Subjects

Forty-three United States Army teams from Fort Benning, Georgia, participated in the study. The 43 teams included 11 howitzer gun sections and 32 infantry squads along with their leaders, who were non-commissioned officers. The teams varied in size from five to ten members. A team of median size was composed of a non-commissioned officer and six enlisted men. No team was composed of less than a leader and five men or larger than a leader and ten men. A total of 300 soldiers were involved in the field study.

The measure of team productivity was an overall rating of the teams' military effectiveness submitted jointly by the teams' platoon leader and the commanding officer of the Company. The ratings were submitted on an eleven point scale ranging from "one of the worst teams I have seen" through "an average team" to "one of the best teams I have seen." Only these three points on the scale were described.

The test format used contains 20 sets of personality adjectives and their antonyms, with each pair separated by a six-point scale (Fiedler, 1960, p. 590). Some of the adjectives included friendly-unfriendly, cooperative-uncooperative, quits easily-keeps trying, confident-unsure, bold-timid, and careless-careful. The S is given two identical scale sheets and the S is asked to describe the "person with who you can work best" and the "person with whom you can work least well." His most and least preferred co-workers may be individuals with whom he currently works, or they may be people he has known in the past. To obtain ASo, corresponding items on the two scale sheets are compared, and the differences between scores on corresponding item pairs are squared and summed. The square root of the squared and summed differences provides a reasonably normal distribution of scores (Fiedler, 1960).

Results

The correlation between the leader's ASo score and the team's rating of overall effectiveness was .22 ($n = 40$, n.s.). These results are opposite to those reported by Fiedler. Here, the leaders who evaluate the high and low reference persons more similarly (low psychological distance in Fiedler's terms) are in command of more productive teams.

In the second analysis, the teams were divided into high and low-effective units. This was accomplished by dividing the team ratings at the point where an even number of teams were clearly differentiated. In this manner 17 high and 17 low rated teams were identified and compared with regard to the leaders' mean rating of the least preferred co-worker and the most preferred co-worker. (See Table 1). There was no statistically significant difference between the leaders of high as opposed to low rated teams with regard to their evaluations of the high reference persons in the dyadic scales; but the leaders of the high rated teams were found to rate the low reference person higher ($t = 2.18$, d.f. 32, $p < .05$).

The final analysis concerns the specific rating scale points used by leaders of high rated teams as compared with leaders of low rated teams in describing the least preferred co-worker. In a 2×6 analysis of variance for repeated measures (Edwards, 1960) involving the leaders of high and low rated teams and six rating scale points, the interaction effects between high-low leaders and scale points was statistically significant ($p < .05$). (See Table 2). The high leaders differ from low leaders in the frequency with which they used the six rating scale points with reference to the least preferred co-worker. Inspection of the data revealed and the Tukey HSD test (Ryan, 1960) confirmed ($p < .05$) that the leaders of the high rated teams used the lowest evaluation

scale point less often than the leaders of less high rated teams.

Discussion

The results are opposite to those reported in earlier investigations involving dyadic rating scales. Previous research by Fiedler (1960) demonstrated that leaders of more productive groups maintained a greater psychological distance between themselves and the group members. The results of the present study indicate that the leaders of the higher rated teams maintained less psychological distance between themselves and the group members. The results of two previous studies involving industrial groups (Kirchener, 1961; Hawkins, 1962) and a study involving farm cooperatives (Cronbach, 1958) revealed that leaders of more productive groups were more severe in their ratings of the least preferred co-workers than were leaders of less productive groups. In the present study, the results were diametrically opposite. Finally, in the present study it was found that the leaders of lower rated teams used the lowest rating scale point when describing the least preferred co-worker more often than did the leaders of the higher rated teams. An explanation of the contradictory results was sought by reexamining the characteristics of infantry training teams and the objectives of the team leaders.

The first line supervisor of the military training unit is presented with a heterogeneous collection of recently inducted soldiers varying widely with regard to physical, psychological, and sociological characteristics. The group members do not select the group; and the group leaders in no way are involved in the selection of the members. Moreover since service in the United States Army is compulsory for the conscripted members and, indeed, for all members of the Armed Forces who have taken the service oath, low performance is insufficient cause for dismissal. Under these conditions, one of the primary functions of

the leader of a training unit is to facilitate the rapid development of all the members of his unit in the basic techniques of soldiering. In the process of assisting in improving the level of performance of all the team members to a required basic standard, the leaders necessarily are most concerned with the "least preferred" team members whose marginal performance threatens to immobilize or seriously retard the group's development and overall performance. Since unsatisfactory performance is an insufficient basis for discharge in the Army, the leader is constrained to optimize the given human resources. Thus, in contrast to groups in earlier studies of assumed similarity, the leaders in the present study are assumed to be primarily concerned with the optimal development of all the members rather than with the selective screening of the superior members.

Against this background, the results suggest that the leaders of higher rated training teams show more concern for and encourage the development of the members whose performance is marginal. Furthermore, the results suggest that the leader is most successful in working with these less effective team members if he does not sharply differentiate the most preferred and least preferred co-workers; or perhaps more directly, if the leader's attitude toward the less talented team members or those less positively disposed toward military training are not perceived, categorized, and condemned as untrainables or incorrigibles. It is hypothesized that the leaders of the higher rated training teams possess a more positive attitude toward the trainability of all personnel assigned to their units. This positive attitude may be attributed, in part, to greater cognitive complexity or to less narrowly and less rigidly defined standards of acceptance within an evaluation system or style that includes more than dichotomized rating scales such as good-bad and trainable-untrainable.

Thus, in groups where the leader has little or no control over the selection, assignment, reassignment, or discharge of personnel and where group success is dependent largely upon the leader's ability to guide all the group members in reaching a given minimum standard of achievement of the most fundamental objectives of a training program, the leaders of the higher rated teams are less severe in their evaluations of members with lower achievement potential. In terms of Fiedler's dyadic rating scales, the leaders of the higher rated training teams tend to be less severe in their ratings of the least preferred co-workers and less likely to use the lowest rating scale points in describing the least preferred co-worker.

Similar results to these may be expected with regard to similar groups. Thus, it is hypothesized that in any teams compelled by economic or labor conditions to accept and utilize a high percentage of job applicants, the leaders of the more productive teams will be found to possess similar perceptual proclivities with regard to the less desirable employees. Similarly, it is hypothesized that in the early elementary school grades and particularly in schools with a high percentage of underprivileged children, the most successful teachers (in terms of student performance at given minimum standards of achievement by the maximum number of students) are less severe in their adjectival descriptions of the least preferred student. Thus, Fiedler's results concerning assumed similarity may be applicable only in situations where the leader is an agent of personnel selection, where a high standard of achievement is essential to immediate group survival, and where group improvement may be achieved by elimination rather than the development of the less competent group members.

Summary

Fiedler's studies indicated that leaders who maintain a greater psychological distance between themselves and the group members are more effective in promoting group productivity. This series of studies was criticized on the basis of the circumscribed characteristics of the sample of groups and also on the basis of the indirect statistical analyses. The present study involved 43 infantry teams in training. Leaders of high and low teams as rated by their commanding officers were compared with regard to assumed similarity scores, mean ratings of the low reference co-worker, mean ratings of high reference co-worker, and points selected on the descriptive rating scales of the low reference co-worker. The results were opposite to those found by Fiedler. The correlation between the leader's assumed similarity score and team rating was .22 (n.s.); leaders of the high rated teams evaluated the low reference person higher ($p < .05$); and leaders of high rated teams used the lowest evaluation scale point less frequently than the leaders of low rated teams with reference to their evaluations of the low reference co-worker. The results were interpreted as suggesting that under conditions where the leader has little or no control over the selection, assignment, or discharge of personnel and where group success is dependent largely upon the leader's ability to guide all the group members in reaching a minimum standard of achievement of the most fundamental objectives of a training program, the leaders of the higher rated teams are more sanguine with regard to the trainability of all personnel assigned to their units. This positive attitude was attributed, in part, to greater cognitive complexity or to less narrowly and less rigidly defined standards of acceptance within an evaluation system or

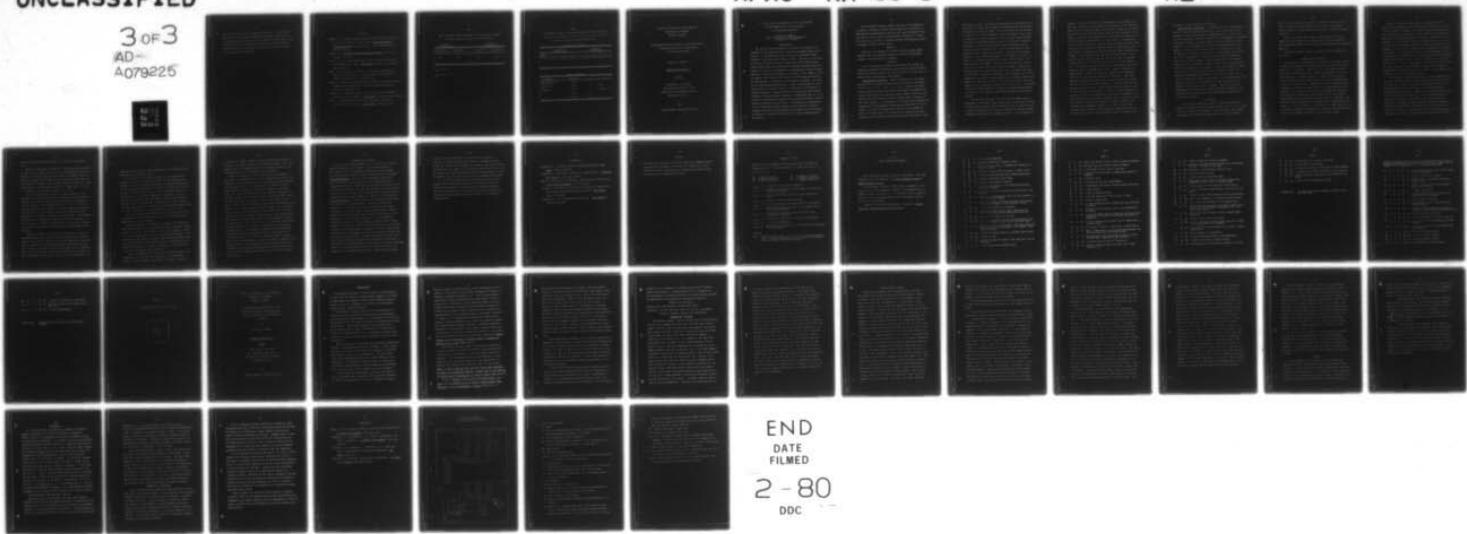
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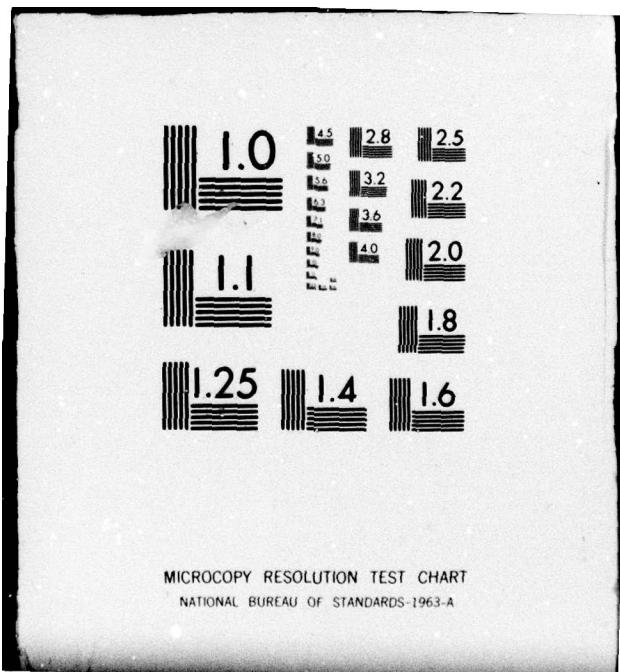
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style that included more than a dichotomized rating scale. It was concluded that Fiedler's results concerning assumed similarity may be applicable only in situations where the leader is an agent of personnel selection, where a high standard of achievement is essential to immediate group survival, and where group improvement may be achieved by elimination rather than the development of the less competent group members.

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Table 1

Mean Evaluations of "Least Preferred" and "Most Preferred" Co-Workers
by Leaders of High and Low Rated Military Teams (N=34)

Leaders of High Rated Teams		Leaders of Low Rated Teams	
Most Preferred A	Least Preferred B	Most Preferred C	Least Preferred D
4.71	3.69	4.76	2.90

$T_{AC} = .22$, N.S.

$T_{BD} = 2.18$, $p < .05$

Table 2

A 2x6 Analysis of Variance for Repeated Measurements Involving Leaders of High and Low Rated Teams and the Frequency of the Leader's Use of the Six Points of the Least Preferred Co-Worker Scale

Mean Use of Scale Points

Scale Points	Leaders of High Rated Teams						Leaders of Low Rated Teams					
	1	2	3	4	5	6	1	2	3	4	5	6
	14.8	16.7	24.0	19.1	23.4	19.0	35.3	15.8	19.4	14.8	14.6	18.9

Analysis of Variance

Variable	Mean Square	d.f.	F
High-Low Leaders	5.18	1	
Scale Points	360.24	5	1.08
Interaction	918.15	5	2.75 ($p < .05$)
	58.53	32	
	334.04	160	

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An Experimental Investigation of the Relationship
of Individualization of Group Members
to Conformity Behavior

by

Charles E. Hawkins

Technical Report No. 7

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An Experimental Investigation of the Relationship
of Individualization of Group Members
to Conformity Behavior 1

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Introduction

The research on the alignment of behavior in groups to the standards of the group has been concerned principally with identification of factors which induce conformity, (Festinger, 1954; Schachter, 1951; Back, 1951; Gerard, 1953). However, to the extent that deviant behavior may have origins other than wherein those factors which have been identified as inducing conformity are minimized, the worth of an attempt at identifying some forces actually away from conformity is suggested. Clearly, in this regard, it can be expected that behavior may deviate from the group norm when it is instrumental to the needs of individuals to deviate. And since in the experimental paradigm used to study the operation of pressures towards uniformity there is no variation of the utility of deviate responses, it may be useful to presume that some residual deviation occurring despite pressures to uniformity does so out of need for individuation associated with a general utility of individualistic behavior in our culture. Consideration of characteristics of groups which might account for such utility of individualistic behavior readily suggests some factors, as for instance, an empirical correlation between role or status differentiation and rewards.

But the present problem, rather than such an accounting, is to design a situation in which group members are, according to experimental manipulations, made more and less individuated from one another, and to observe corresponding tendencies to deviate from the group in order to determine whether individuated members of groups do indeed deviate less.

Subjects

Data are the responses of 54 male students, mostly upper-classmen with some education graduate students in psychology courses at the University of Delaware.

Procedure

In the following procedure it is assumed that having S's complete biographical inventories which are also read by others make individuality salient, and that reduction of visual cues of members makes individuality less salient.

Individuated Condition. Subjects reported to a secretary who put them in separate rooms and had them fill out biographical inventories. When they were finished the experimenter presented himself and asked them singly to accompany him to the experimental room, which was well lighted, where S's were asked to be seated and wait without talking while E brought in the other subjects. In leading Ss to the room E was engrossed in reading the S's biographical inventory and preceeded S by a few paces. Once the Ss forming each group were thus assembled E said, "All right, while I'm setting up the equipment and your eyes are becoming adapted, you may as well get some idea of what

each other is like. Why don't you exchange your inventories and read them." When Ss had finished E, standing behind the Ss, said, "I guess we're ready to start. We are interested in the effects of the level of the illumination on the perception of the number of objects in a group of objects. You are in the high illumination group. The group's task is going to consist of estimating the number of dots on a slide which will be projected on the screen directly in front of you. The same slide will be shown many times for a duration of a second. Each time it is shown, you are to write down your estimate of the number of dots on the slide, on the tablet provided on the arms of your chair. Don't look at others' estimates. There is a large number of dots and one of you is just as apt to be right as another. When you've written down your estimate each time, turn the page to the back of the tablet, exposing a fresh page, and be prepared for another exposure of the slide. Just to keep track of whose estimates are whose, would you put the letter 'A' at the top of the first page (taps S on the shoulder), and you, 'B', and you, 'C'. I will give you a four second warning of 'ready' six seconds after exposure of the slide. All right, we will begin showing the slides now. Ready?"

The slide was projected ten times in this manner and the experimenter then said, "Fine, please tear off the top ten sheets of your tablet and hand them to me when I come to collect them." E took the estimates out of the room asking Ss, "please continue looking straight ahead and maintain silence. I'll be back in a

moment." Outside of the room, E simply waited three minutes and came back into the room and going to the projector said, "Because this is such a difficult task, I've prepared a slide in red grease pencil just to give you some idea of how you stand relative to one another. There are no numbers given on the slide but you will see three horizontal lines labeled 'A', 'B', and 'C', corresponding to the letters I gave you. You can tell two things from the slide; first, you can tell by the relative length of your line how big the difference between your highest and your lowest estimate was compared to the others'. Also, by how far to the right of the other lines your line is, you can tell if you tend to estimate a larger number of dots than the other members of the group or not. If your line is more to the left of the others, this indicates you tend to estimate fewer dots." Again (E repeats the explanation)--E showed the slide and summarized it by saying, "You can see, you were all pretty much the same." (The slide shown was actually the same for all groups) E then said, "Let's try the dot slide a few more times now. It will be exactly the same procedure as before. Write down the letter assigned to you on the front page of the tablet. Ready?" (E then repeated the procedure for ten more trials and collected the estimates.) Ss were then given an independent variable check in the form of the questionnaire listed in the appendix on page 1, Barron's ego strength scale (appendix, pages 2, 3, 4, and 5) and an ego strength scale designed for the experiment (appendix, page 6). Ss were then briefed on the experiment, asked to refrain from

discussing it with friends, and released.

Deindividuated Condition. Ss reporting to the secretary were placed to wait in separate rooms; they did not fill out the biographical inventory but waited a comparable period of time to Ss in the individuated condition filling out the biographical inventory. E presented himself to them and asked them individually to accompany him to the experimental room again preceding them by a few paces. At the door of the room, E said, "It's going to be dark in there, so I'll guide you by the arm to your chair," and he did so. When S was seated, E asked him to wait without talking and went to get another subject. When the three Ss for a group were thus assembled, E positioned himself behind them at the projector and after adjusting it for a period of time (four minutes) comparable to the time given the individuated groups to look at one another's biographical inventories. At the end of that time, E said, "I guess we're ready to start now. We are interested in the effects of the level of illumination on the perception of the number of objects in a group of objects. You are in the low illumination condition of the experiment," (the remainder of the instructions and procedure are the same as those described for the other condition).

Materials

A light proof room 20 ft. x 20 ft., was used with three chairs for subjects, two feet apart, facing a 3 ft. x 3 ft. screen ten feet in front of the chairs. A slide projector was mounted in a light proof box with a lense funnel to confine radiated

light to that falling on the screen, which was of black velvet in order to reduce reflection back into the room. The room was provided with one 40 watt bulb which was used in the individuated condition.

Two 2" x 2" slides were used; one was covered in a random manner with 1800 1/32" dots of black ink; the other consisted of three horizontal lines in red grease pencil as shown in the appendix, (page 7).

The other materials have been treated in the description of procedure.

Results and Discussion

Each subject's 20 estimates were converted to standard scores to take out anticipated wide between-subject differences in absolute level of estimates. Expecting also on the basis of pilot work that estimates would tend to vary considerably at first and then stabilize, the mean estimate of trials 9 and 10, the last two pre-feedback trials, was selected as the most representative of the first block of ten. Estimates 11 and 12, among the first estimates in the post-feedback block of ten estimates which were expected to be the scores most affected feedback were averaged. The difference between these two mean scores for each subject, disregarding sign, constitutes the basic datum of comparison, and contrast between experimental conditions is not significant as is shown in $t = 6.9 - 11.2/6.1 = -.70$ with 52 d.f. where the trend is, if anything, slightly the opposite of that which was hypothesized; with the individuated condition registering more change.

Seeking a reason for this failure by comparing the two experimental conditions on the questionnaire intended as a check of the independent variable, the result obtains that subjects in the deindividuated condition are significantly more individuated than subjects in the individuated condition. The scores dealt with here are the totals of the individuation items 4, 6, 9, and 10, (the other items were included to measure discomfort with the situation), scored by the a-priori keying indicated in the appendix on page 1. A high score indicates low individuation and the t test showing the means for the individuation and deindividuation groups respectively, gives $t = 18.92 - 11.36/4.11 = 1.84$, which with 52 d.f., $p < .05$. Taking these results at face value, under the circumstances of the experiment, subjects who completed biographical forms which are read by others in their group and are highly visible, feel less individuated.

An alternative possibility is that the sheer unusualness of the utter darkness of the deindividuated condition made subjects feel they were getting very special treatment relative to the general population in the student body and this made their individuality more salient. Another related possibility is that in the deindividuated condition, the early waiting period in silence and darkness, raised anxiety and made subjects more conscious of themselves, their threatened welfare or whatever, and this anxiety-mediated individuating effect over-rode the direct and intended deindividuating ones of the manipulation. In line with this, several subjects balked and many grew visibly

uncomfortable when they were about to be led into the darkened room.

While the independent variable did not have predicted effects and experimental groups did not differ in individuative behavior, looking at the pre-to post-feedback change in estimate, when subjects are grouped on the basis of being above the median score on the independent variable check (deindividuated) or below the median (individuated), deindividuated subjects do change more. $t = 4.34 - 14.77/6.10 = - 1.71$ which for 52 d.f., $p < .05$.

Also the dissatisfaction items as keyed on page 1 of the appendix, do correlate positively and highly with the independent variable check items, indicating deindividuation is accompanied in this situation, with dissatisfaction ($r = .68$, $p < .01$), and possibly explaining the tendency for persons reporting themselves deindividuated as individuating themselves by making different estimates in an attempt to decrease dissatisfaction. Unfortunately, the insertion of measurement operations into this situation to permit measures of change in satisfaction as a function of change in estimation, would have been disruptive of the process of basic interest.

Turning to matters of individual differences, the original proposition was that if there is some general utility of individuation in our culture, then if persons are deprived it, they may seek to establish it in compensatory ways. This should be less true, however, of persons of high ego strength since an important part of the ego strength concept is an awareness of the self as a set of tendencies, goals, etc., enduring over the vicissitude of

experience; they would be less susceptible to our deindividuating inductions and compensate less.

To test this, two different measures of ego strength were obtained on each S. One (shown on page 6 of the appendix with instructions and keying) was constructed to emphasize measurement of the individual's awareness of himself as an object well differentiated in terms of his values, capacities, goals, and needs. Total scores on this measure (ES2) were classified as above or below the median score, and the change in pre-to post-feedback estimate of the two groups was contrasted in a t test: showing the mean change score for the high and low ES2 groups respectively, $t = 3.84 - 14.35/6.10 = - 1.72$ which with 52 d.f., $p < .05$.

The t is significant but the decision that this is confirmatory of the prediction should be deferred by the reader pending consideration of other results.

Another measure of ego strength-- Barron's scale (ES1) was used as a safeguard since it has undergone some validation against empirical criteria. This scale is given in the appendix on pages 2, 3, 4 and 5 with instructions, and is keyed for scoring. Testing the same hypothesis in the same manner in which ES2 was dealt with, and showing the mean change score for the high and low ES1 groups respectively, $t = 14.91 - 4.20/6.10 = 1.75$, which at 52 d.f., has a probability of less than .05.

High ego strength Ss by this measure, actually change more. (Subsequent to the design and execution of this experiment Robert C. Ziller brought to the authors attention a report by

by Crutchfield (1955) in which a negative correlation between ego strength on the Barron scales and conformity is shown. If in the present study, not changing away from the group estimate is conforming behavior, the two studies are in agreement.)

There is nothing in the data arising from the experiment indicative of an explanation of these contradictory outcomes, but inspection of the format of the two ego strength forms themselves readily suggests one: On the ES2 scale, all twenty items are keyed High Ego Strength for affirmative answers. On the ES1 scale, two thirds of the items are keyed High Ego Strength for a negative answer. Since ES2 is correlated negatively with change, and ES1 positively with change, it may be that what has been demonstrated is that Ss who tend to agree with questionnaire items (ES2), tend to agree with their group's estimate, and obversely, Ss who disagree with questionnaire items (ES1), tend to disagree with their group's estimate. Understanding of the relationship of ego strength to individuative behavior is not enhanced, whatever the correctness of this possibility, but it may have implications for other aspects of the study: Reexamining the finding that deindividuation on the independent variable check questionnaire was associated with post-feedback change in the light of an acquiescence factor, it is seen in the questionnaire (appendix, page 1) that deindividuation increases by means of agreement with the items, but it is the subjects who agree with the items who "disagree" with the group as represented in the feedback information...hence a spurious acquiescence factor does not explain this finding.

Summary and Conclusion

In order to determine whether or not deviation in a group might be explained as an attempt to restore some degree of individuation when circumstances deindividuate group members, an experiment was conducted in which there were two conditions:

High individuation. Ss filled out biographical inventories, read one another's, and worked under high illumination; the assumption being that completing the biographies and having one's own read by others would increase the saliency of self or individuality, while the visual cues of individuality afforded by high illumination would also increase the saliency of individuality.

Low individuation. Ss did not fill out biographical inventories and worked under low illumination. The group task was the estimation of the number of dots on a projected slide shown repeatedly. After ten trials, Ss were given feedback, always showing them about the same as the others in the group in their estimation. Ten more trials were given. Low individuation conditions, as such, did not increase deviation from the group estimate. However, Ss scoring as deindividuated on an independent variable check questionnaire, irrespective of their experimental classification, did change more away from the group estimate than Ss scoring as individuated. General satisfaction with the experiment was positively correlated with experienced individuation. Testing the subsidiary hypothesis that persons of high ego strength should be less susceptible to deindividuating inductions, two measures of ego strength were obtained. Barron's ego strength

scale scores were positively correlated with deviation. A tendency to agree with items and, therefore, perhaps, also the group, was discussed as a mediator reconciling these contradictory findings since all items of the tailor-made scale were scored high ego strength for agreeing responses and the preponderance of items on Barron's scale are high ego strength for disagreeing responses.

It is concluded that while the operations inducing individuation among group members have not been predicted correctly, subjects who experience deindividuation for whatever reasons, are more dissatisfied in the situation and tend to deviate more from a modal group opinion than subjects who do not experience deindividuation.

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Footnote

1. The author is indebted to Dr. Robert Ziller, Mr. Edward Thompson and Miss Sally Straughn of the Center for Research on Social Behavior for their suggestions in designing this study and help in conducting and analyzing its results.

Delaware GS Scale

Please mark each statement according to how much you agree or disagree with it. Please mark every one. Write in +1, +2, +3, or -1, -2, or -3.

+1: I agree a little
+2: I agree pretty much
+3: I agree very much

-1: I disagree a little
-2: I disagree pretty much
-3: I disagree very much

- _____ 1. I thought it was a dull experiment.
- _____ 2. I would not be willing to serve again as a subject in a similar experiment.
- _____ 3. I felt uncomfortable during the light adaptation period.
- _____ 4. I was not treated as an individual.
- _____ 5. We should have been told more about the experiment.
- _____ 6. This experiment did not afford me an opportunity to reveal my personality.
- _____ 7. I would have performed better under the other illumination condition.
- _____ 8. It would be a good idea to introduce the members.
- _____ 9. I felt too unimportant.
- _____ 10. Individual differences were not sufficiently recognized in the experiment.

Scoring

Key: Agreement with items 4, 6, 9, and 10 is scored deindividuation. Agreement with items 1, 3, 5, 7 and 8 and disagreement with item 2 is scored discomfort.

E S 2

SELF CONCEPT QUESTIONNAIRE

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

If a statement is TRUE or MOSTLY TRUE, as applied to you, circle the T. If a statement is FALSE or NOT USUALLY TRUE, as applied to you, circle the F. If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

T F 1. I have a good appetite.

T F 2. I have diarrhea once a month or more.

T F 3. At times I have fits of laughing and crying that I cannot control.

T F 4. I find it hard to keep my mind on a task or job.

T F 5. I have had very peculiar and strange experiences.

T F 6. I have a cough most of the time.

T F 7. I seldom worry about my health.

T F 8. When I am with people, I am bothered by hearing very queer things.

T F 9. I am in just as good physical health as most of my friends.

T F 10. Everything is turning out just like the prophets of the Bible said it would.

T F 11. Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep".

T F 12. I am easily downed in an argument.

T F 13. I do many things which I regret afterwards (I regret things more often than others seem to).

T F 14. I go to church almost every week.

T F 15. I have met problems so full of possibilities that I have been unable to make up my mind about them.

T F 16. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.

T F 17. I like collecting flowers or growing house plants.

T F 18. I like to cook.

T F 19. During the past few years I have been well most of the time

T F 20. I have never had a fainting spell.

T F 21. When I get bored, I like to stir up some excitement.

T F 22. My hands have not become clumsy or awkward.

T F 23. I feel weak all over much of the time.

T F 24. I have had no difficulty in keeping my balance in walking.

T F 25. I like to flirt.

T F 26. I believe my sins are unpardonable.

T F 27. I frequently find myself worrying about something.

T F 28. I like science.

T F 29. I like to talk about sex.

T F 30. I get mad easily and then get over it soon.

T F 31. I brood a great deal.

T F 32. I dream frequently about things that are best kept to myself.

T F 33. My way of doing things is apt to be misunderstood by others.

T F 34. I have had blank spells in which my activities were interrupted and I did not know what was going on around me.

T F 35. I can be friendly with people who do things which I consider wrong.

T F 36. If I were an artist, I would like to draw flowers.

T F 37. When I leave home, I do not worry about whether the door is locked and the windows closed.

T F 38. My plans have frequently seemed so full of difficulties that I have had to give them up.

T F 39. At times I hear so well it bothers me.

T F 40. Often I cross the street in order not to meet someone I see.

T F 41. I have strange and peculiar thoughts.

T F 42. Sometimes some unimportant thought will run through my mind and bother me for days.

T F 43. Sometimes I enjoy hurting persons I love.

T F 44. I am not afraid of fire.

T F 45. I do not like to see women smoke.

T F 46. When someone says silly or ignorant things about something I know, I try to set him right.

T F 47. I feel unable to tell anyone all about myself.

T F 48. I would certainly enjoy beating a crook at his own game.

T F 49. I have had some very unusual religious experiences.

T F 50. One or more members of my family is very nervous.

T F 51. I am attracted by members of the opposite sex.

T F 52. The man who had the most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.

T F 53. Christ performed miracles such as changing water into wine.

T F 54. I pray several times every week.

T F 55. I feel sympathetic towards people who tend to hang on to their griefs and troubles.

T F 56. I am afraid of finding myself in a closet or small closed place.

T F 57. Dirt frightens or disgusts me.

T F 58. I think Lincoln was greater than Washington

T F 59. I am made nervous by certain animals.

T F 60. My skin seems to be unusually sensitive to touch.

T F 61. I feel tired a good deal of the time.

T F 62. I never attend a sexy show.

T F 63. If I were an artist, I would like to draw children.

T F 64. I sometimes feel that I am about to go to pieces.

T F 65. I have often been frightened in the middle of the night.

T F 66. I very much like horseback riding.

Scoring Key: The high ego strength response is under scored for each item.

E S 1

In the following questions circle the abbreviated choice, that is whether you strongly agree with the statement (SA), agree (A), are undecided (U), disagree (D), and strongly disagree (SD).

SA	A	U	D	SD	1.	I can predict pretty well how I'll react in a new situation.
SA	A	U	D	SD	2.	I have a firm set of values.
SA	A	U	D	SD	3.	People ought to think more about why they're alive.
SA	A	U	D	SD	4.	I have a fairly clear understanding of what I need in life.
SA	A	U	D	SD	5.	I enjoy competition.
SA	A	U	D	SD	6.	I understand why other persons act as they do most of the time.
SA	A	U	D	SD	7.	I'm an organized person.
SA	A	U	D	SD	8.	My personality hasn't changed much in the last year.
SA	A	U	D	SD	9.	I think a proper amount of my present behavior is determined by long range goals.
SA	A	U	D	SD	10.	I'm satisfied with my life.
SA	A	U	D	SD	11.	I can concentrate as well as I need to.
SA	A	U	D	SD	12.	I am not too easily influenced by other people.
SA	A	U	D	SD	13.	I act pretty much the same towards all my friends.
SA	A	U	D	SD	14.	I'm a lot like my mother.
SA	A	U	D	SD	15.	I'm a lot like my father.
SA	A	U	D	SD	16.	I'm an optimistic person.
SA	A	U	D	SD	17.	I'm attracted to happy people.

SA A U D SD 18. I have a wide variety of interests.

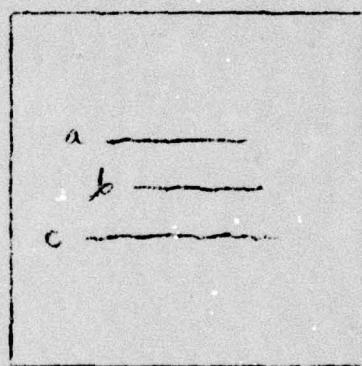
SA A U D SD 19. You can get out of life what you put into it.

SA A U D SD 20. I like responsibility.

Scoring Key: Agreement with all items is scored high ego strength.

Figure 1

Feed-back slide used on all groups



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An Experimental Investigation of the
Relationship Between Group Structure
and Beliefs About the Individuality
of Members

by

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to the

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INTRODUCTION

The probable relevance of beliefs about the individuality of one's self and others to social behavior suggests an attempt at identifying the origins of these beliefs amongst group properties in order to manipulate such beliefs and subsequently observe belief - mediated behavior.

One property of groups exists in the differentiation of behavior of members induced by the normative process wherein, for any position, prescriptions of the conditions for action and the precise form of the action are enforced by sanctions accruing to the action. (Henceforth, groups in which members are so differentiated will be called individuated, and groups where members are undifferentiated, i.e., responding in the same way to the same stimuli with the same rewards will be called deindividuated.)

When members are differentiated the conditions establishing beliefs of individuality would seem fulfilled. In the extreme case one member would not understand the behavior of another, what brings it about or its consequences. In less extreme cases such understanding would exist, giving basis to clear recognition of differences between persons. In either case some social concommittants to such perceptions of differences may be expected, and a few of these will now be discussed.

Beliefs about the similarity of others in the group to one's self should make the group a more attractive situation for social comparison and it is such a comparison situation

which is sought out under doubt as to the correctness of one's opinion or one's skill in some matter. (Chapman and Volkman, 1) (Hoffman, Festinger and Lawrence, 2). Then in deindividuated groups where member similarity has an actual basis, meeting a precondition of influence, social comparison should occur and actual modification of opinion should therefore be greater in deindividuated groups. Another important factor bearing upon influenceability is the attractiveness of the group. (Schachter, 3) (Back, 4). In deindividuated groups the identity of the stimuli occasioning behavior should render one person's stimulus the discriminative stimulus of another. Presuming responses terminated in reinforcement, then others' responses would gain discriminative control over consumatory behavior of any member. Since discriminative stimuli are secondary reinforcers, greater control over the behavior of a member should be possible in deindividuated groups (Hypothesis 1).

Also beliefs of group members concerning the similarity of one to another would seem to govern the substitutability of one members act for anothers. In deindividuated groups, as described, more actual basis exists for perceptions of similarity and, by the argument under the first hypothesis, for members' acts acquiring some positive value for one another. Hence, it may be expected when only one person might represent the group in consequential matters, members will be more willing to entrust their representation to another member (Hypothesis 2).

Finally, language used in differentiating persons, pronouns, can be expected to be at higher frequency among those believing in the individuality of members (Hypothesis 3).

These verbal forms may arise, for example, when the speaker, because of his beliefs in his individuality, might wish to make clear that, while he endorses a view, he does not think others need also necessarily. Views in this case might be prefaced with "I don't know how you feel about it, but I think....". Also, with such a belief about the individuality of persons, statements might be more specifically addressed by the speaker who would then use prounounal forms appropriate to this situation, such as you, your, yours, wherein, by the act of addressing speech and using language isolating the addressee, others present are to be omitted. However, if the speaker did not perceive the group as differentiated, speech might be more difusely broadcast with less need for words denoting interpersonal structure.

These hypothesized tendencies do not exhaust likely social behavioral correspondences to group beliefs about individuality. For example, behavior towards property and patterns of communication might also be expected to be altered by beliefs of individuality. But the task immediately at hand is to design an experimental induction of this sort of belief and observe its consequences on the few forms of behavior connected to it by the sample hypotheses.

It could not be hoped an experimental induction--limited by the time subjects could serve, their lack of dependancy on their groups, and attenuation of the range of sanctions on behavior in an experimental group--could be in itself very potent in shaping beliefs about individuality. In the induction

as about to be described it is assumed the effects of experimental individuation or deindividuation will be augmented by the instigation of existing attitudes and beliefs already learned as appropriate to the particular experimental condition.

Subjects and Materials

Subjects were 120 volunteer undergraduate males.

Materials: See the appendix, page one, for the experimental lay-out, equipment placing and nomenclature.

METHOD AND PROCEDURE

Individuated groups: S's were brought into the experimental room by E who assigned them seats and gave them those instructions: "Before I tell you much about the purpose of the experiment I would like you to have some experience on the group task. On the mirror in front of you three lights will appear. I would like you (E points to S_A) to respond to the light that will appear here, (E points to the A light position), you (E points to S_B) to the light appearing here (E points to the B light position), and you, (E points to S_C) to the light appearing here (E points to the C light position). Each of your lights will be on, those times it is presented, for a period of one second during which time you should make your response, which I'll describe in a moment. If your light is presented two consecutive trials, this will be made clear by the fact that at the end of the first one-second presentation your light will go off and come on again rapidly--a distinctly noticeable flicker--and stay on again for one second. A response should be made to each of these presentations. Sometimes your light may come on

for several consecutive presentations or may stay off for several consecutive presentation periods. You should avoid responding when your light is not on. You should pay attention only to your own light--it may be on or off in any combination with the other two lights. If you attend the lights not assigned to you, you may make an error by responding to one of theirs when they are on and your own is off. You will notice that each of you has a different device in front of you.

I would like for you to respond to each presentation of your light (E walks to S_A) by making a contact like this (E presses key and releases it immediately). You (E turns to S_B) should say 'on' into your microphone each time your light appears in a conversationally audible voice, (E demonstrates on the microphone and turns to S_C) and you should close and open this toggle switch each time your light appears. You'll notice here the on and off positions are labeled. When your light is off the switch should be in the off position. When your light comes on you should push the switch to the on position and then instantly back to the off position, waiting for the next presentation. All right, I'll start the light series now and you'll see exactly what I mean--start right in responding as soon as your light appears and continue until I return." As E left the room he asked, "Please don't talk to one another during this phase of the experiment".

Deindividuated groups:

Subjects were brought into the experimental room by E who assigned them seats and gave these instructions: "Before I tell you much about the purpose of the experiment I would like you to have some experience on the group task. On the mirror in front of you a light will appear (E points to the B light position). I would like you to respond each time the light appears. Your light will be on each time it is presented, for a period of one second, during which time you should make your response. If your light is presented two consecutive trials, this will be made clear by the fact that at the end of the first one-second presentation your light will go off and come on again rapidly--a distinctly noticeable flicker--and stay on again for one second. A response should be made to each of these presentations. Sometimes your light may come on for several consecutive presentations or may stay off for several consecutive presentation periods. You should avoid responding when your light is not on. You should pay attention to your light--it may be on or off in any combination. If you do not attend your light you may make an error by not responding when your light is on. You will notice that each of you has a similar device in front of you. I would like for you to respond to each presentation of your light (E walks to S_A) by making a contact like this (E presses S_A 's key and releases it immediately). You (E turns to S_B) should do the same (E demonstrates, turns to S_C and says) and you do the same. All right, I'll start the light

series now and you'll see exactly what I mean--start right in responding as soon as your light appears and continue until I return." As E left the room he asked "Please don't talk to one another during this phase of the experiment."

The Stimulus program tape ran for one half hour at the end of which time E entered the experimental room, saying "That's fine!"

Instructions for test situations: The following instructions are the same for both structured and unstructured groups.

Substitution of behavior: In this situation E said "After we have run a number of groups, a few groups which performed especially well on this task will be contacted to arrange for members to serve in a further experiment. If your group is selected, and agrees to participate further, you will be paid for the additional sessions. In order to simplify matters, if your group is selected, I would like to have the name of a member whom I could contact in order to have him attend a meeting of representatives from each group that is selected. At that meeting, then, we'll talk about hours, wages, and the type of task your group would be working on. Could you have some sort of an election now so I'll know who to contact? Here's a piece of paper. Why don't you put A, B and C on the paper--you're A and you're B and you're C (E points to each correspondingly). Split your vote any way you want between the three of you, working with 100%--so that you can assign any percent of your vote to any person as long as it totals to 100%. Each of you can give your full 100 percent to your-

self, to another person, or you can split it any way you want between yourself and the other two." When the votes were made out E asked that they be handed to him and he put them in order to retain the identity of each members' vote in order that the hypothesis that in unstructured groups, members would give more of their vote to other members might be tested.

Influenciability: E, after entering the experimental room at the end of the stimulus tape program and saying "That's fine", went on, "Now we'll change to a totally different activity. In this we'll simply be getting your opinions on the best disposition of a social rehabilitation problem. The problem concerns a judge who has before him a 16 year old boy who has participated in a robbery. The robbery is the second he has participated in. The first was a year earlier at which time he was placed on probation, which overlapped his second offense. The boy comes from a family that lives in the slums of a large city. His father is employed steadily but drinks heavily and has little use for the boy whom he has beaten often. The boy's mother keeps house and works occassionally. She is intimidated by the husband and withdrawn from the boy. The judge, by the laws of his state, now has two alternatives available to him. He can send the boy to reform school, which is a strict, disciplinarian institution, or he can send the boy to a foster home on probation. The court welfare worker reports to the judge that a well-established middle-age couple has met the boy and liked him, and are willing to take him into their home. Now,

on the paper in front of you, would you write the numbers one to ten. After number 1, write 'foster home' and after the number 10, write 'reform school'. Then I'd like you to encircle one of the numbers indicating the extent to which you feel one of the dispositions should be made by the judge. Do this privately without looking at one another's paper. (After S's all had indicated their opinion, E asked them to hand him their papers. When E had them he placed them in ABC order so that he could identify the papers and said, "Let me record these before we go on", and ostensibly engrossed in recording them E said loudly and clearly, "Well what have we got?" A 10, (E records a 10) - a 4, (E records a 4) - and a 6, (E records a 6). (In each case E read the actual values). O.K., now why don't you discuss amongst yourselves for a while why you thought as you did?" After five minutes of discussion E introjected at the first convenient and natural point, "All right, fine". After discussing the matter you may have revised your thinking some and I would like you to fill out the same scale again where 1 = foster home and 10 = reform school, encircling some number from one to ten indicating your present opinion about the best disposition of the case. When this was completed E asked for the papers, again keeping them in order for later identification and matching with the first set.

Verbal behavior: E, upon re-entering the experimental room after the stimulus tape program had been run off said, "That's fine". Now...(the instructions are the same here as in the influenceability situation, except that no opinion forms were completed). After giving the case history E said, "Now I'd like you to discuss amongst yourselves for a while, what you think the judge ought to do." As the group members spoke, E recorded with the symbol (/) the occurrence of personal pronouns of the nominative, objective and possessive case, first, second and third person singular and second and third person plural. With the symbol (.) E coded every second of elapsed speaking time. A sample coding protocol might be of this form:/./. /....., etc.

At the end of five minutes E ceased coding and terminated the discussion by introjecting at the first conveniently natural point that "That's fine". In all three test situations when the experiment was over E completely explained the purpose of the experiment to subjects before releasing them and asked that they not discuss it with anyone for a period of a month.

RESULTS

Influenciability: The measure used in testing this hypothesis is the difference for each subject between deviation from the mean group pre-discussion opinion and his post-discussion deviation from it. A deviation in either direction from the mean is counted as a positive number. Subtracting the second deviation score from the first, a large positive dif-

ference score indicates influence has occurred. The mean score in the individuated condition is .59 vs 1.37 in the deindividuated condition. $t = .59 - 1.37/.84 = .93$ which with 28 d.f. is not significant at the .05 level.

Substitutability: The hypothesis that in deindividuated groups, members would be more willing to have another represent them was tested by the difference between mean vote by subjects for themselves in the two conditions. $t = .39 - .58/.11 = 1.72$ which with 28 d.f. is significant at the .05 level: ^(one-tailed) in deindividuated groups, members are more willing to be represented by another.

Verbal behavior: The hypothesis that members of individuated groups would more frequently utter words differentiating persons was tested by contrasting the mean number of prounounal words (as described in the method section) in individuated vs that in the deindividuated groups. In this test $N =$ number of groups and, with means of 38 and 42 for the deindividuated and individuated groups respectively, $t = 38 - 42/4.36 = .92$, which with 18 d.f. is not significant at the .05 level of confidence.

DISCUSSION

It is possible that the particular technique of assessing opinion change did not in every case present to subjects a stable reference for evaluation, but may have presented extremes of stability and instability. For example, since the prediscussion opinion measurement permitted subjects to recommend disposition of the case on a scale from 1 to 10, in some groups the three members' pre-discussion opinion may for any group have been by chance very homogeneous or very heterogeneous. In the first instance no change toward the mean would be possible. In the second instance members might see one another beyond the range of stable social comparison processes and not influence one another. To test this, the variance of pre-discussion opinion for all groups were computed and a t test of the mean change between the two conditions was made only on those groups with variances falling between the 25th and 75th centiles of the variance distribution. $t = 1.21 - 2.38/.71 = 1.67$ which with 14 d.f. is slightly below the .05 level of confidence, ^(one-Tailed) showing more change in the deindividuated condition. Presumably, with a larger N this technique may be pursued further.

The substitution findings seem clear cut.

Operating under the possibility that the verbal behavior hypothesis may not have been born out because of differences in the absolute level of out-put between the two conditions, an analysis adjusting for this possibility was preformed. In this analysis the number of pronounal utterances for each group was divided by the total

speaking time of the group, giving a prounounal rate score. t , for the deindividuated and individuated conditions respectively $= .048 - .035/.096 = .14$, which with 18 d.f. and $p > .05$ constitutes a decrement in prediction indicating a slight reversal of the predicted direction. Possibly the slight trend reported for deindividuated subjects to use fewer prounouns in absolute numbers is a function of a depression of total out-put.

Coder reliability between codings of the actual discussions and codings of the recorded discussions for both number of prounouns and elapsed speaking time is quite high. The Rhos respectively are .92 and .87 with 12 d.f., indicating reliability of coding behavior is not a factor in the failure of the hypothesis. It may be that measurement of address of speech of non-verbal sorts would be a more suitable test of the effects of beliefs of individuality on communication. The burden of addressing speech may be thrown more heavily on such acts as looking directly at the addressee rather than denoting the addressee by language.

SUMMARY AND CONCLUSIONS

On the hypotheses that persons believing themselves individuals would be less influenceable, be less willing to have anothers' behavior substituted for their own and use language of personal differentiation more. Subjects assigned to three-man groups were exposed to individuating or deindividuating inductions. In the individuation condition subjects were assigned different stimuli governing their behavior and different responses to the stimuli. In the deindividuated condition all subjects responded the same way to the same stimulus.

To test differences between conditions on influence, group discussions were held, before and after which opinion was measured. No difference in tendencies to change towards the group was observed between experimental conditions. Analysis only of cases where pre-discussion opinion was neither too heterogeneous nor too homogeneous--in the first change towards the group would be impossible and in the second not supported by social comparison processes--was more closely in alignment with the hypothesis.

To test differences between conditions in the extent to which members were willing to have another represent them, subjects were asked to nominate a person from the group who might represent them at a meeting where wages and hours for further participation of the group would be discussed. Subjects in the individuated condition nominated others at a significantly higher rate. A difference between conditions in the usage of language reflecting interpersonal structure was tested by observing the frequency of personal pronouns in group discussion, but was not confirmed. Validity and reliability of measurement were discussed in connection with these results.

Results support the view that differentiation of persons in groups either or both instill beliefs about individuality and instigates such beliefs already learned as appropriate to the situation, and that some social behavior varies in accordance with these beliefs.

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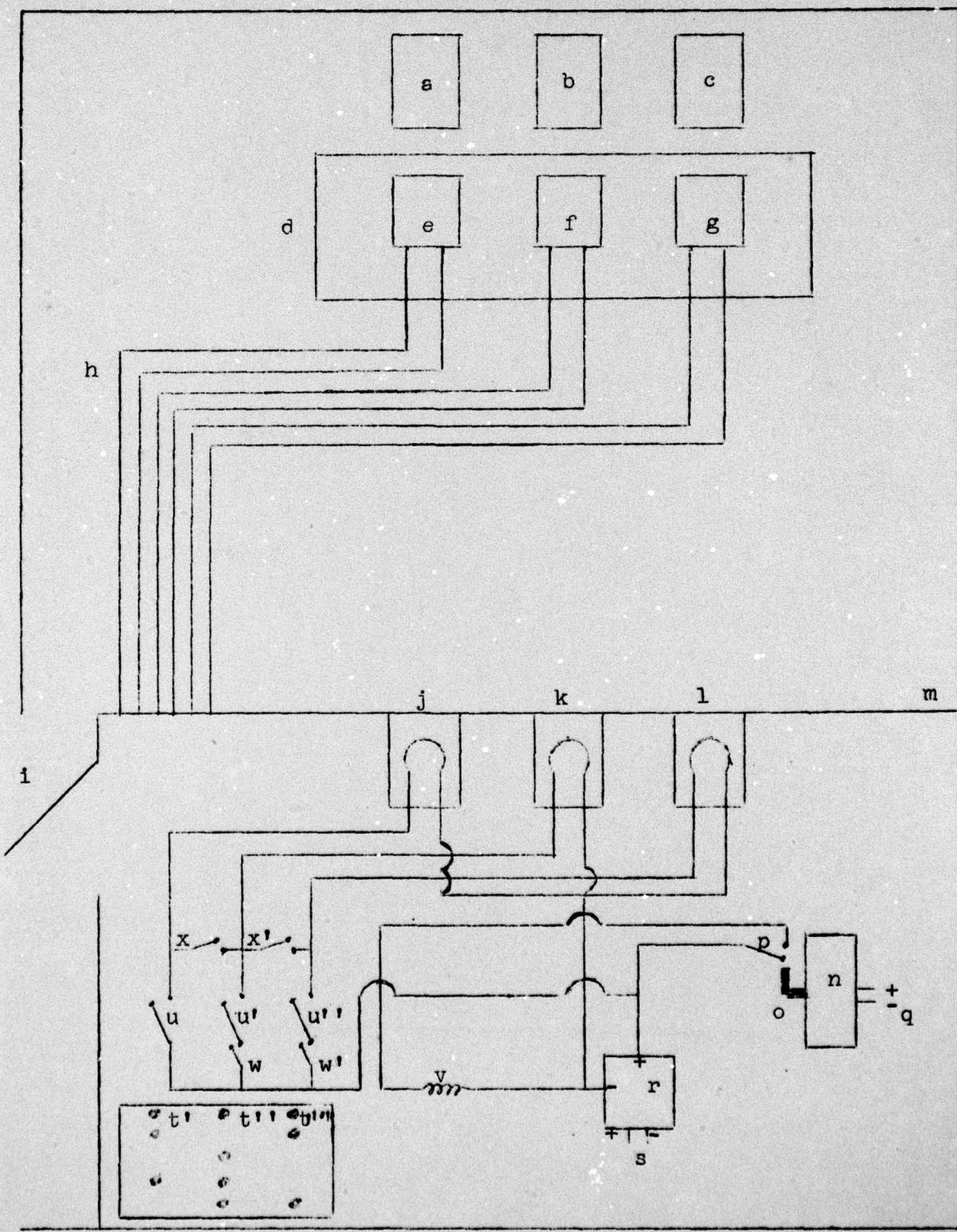
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Layout and wiring of
experimental Equipment
(see following page for key)



a, b, c: subject chair

d: table

e: in the deindividuation condition, e is a telegraph key and in the individuation condition, a microphone.

f: a telegraph key in both conditions.

g: in the deindividuation condition, g is a telegraph key and in the individuation condition, a toggle switch.

h: dead wiring.

i: door to observation room.

j, k, l: forty watt light bulbs mounted in quart cans bracketed to the face of the one-way mirror.

m: one-way mirror.

n: variable speed motor set at one revolution per second, produced by McElroy Manufacturing Corp., Boston, Mass.

o: rotor arm of the variable speed motor activating switch p on each revolution.

p: microswitch.

q: to 115 volt A. C. power line.

r: Hardley Mfg. Co., D. C. power source with potentiometer control from 0 to 120 volts set at 60 volts.

s: to 115 volt A. C. power line.

t: tape role with punched columns activating switches u, u' and u''.

t': subject a's column on tape role. Perforations of tape entered with Western Union Telegraph Company, Multiplex Perforator, model 2-A. For each subject 1200 of the 1800

rows in his column are perforated per tabled random numbers, so that each subject's stimulus may occur in any combination with the stimuli of other subjects.

t'' : subject b's column on tape role.

t''' : subject c's column on tape role.

u , u' , u'' : switches of Western Union Telegraph Company Tape Transmitter model 22-A, activated by t and regulating the occurrence of the stimuli of subjects a, b and c respectively.

v : tape advance solenoid of the tape transmitter.

w , w' : switches which are open in the deindividuation condition and closed in the individuation condition.

x , x' : switches which are closed in the deindividuation condition and open in the individuation condition.